VISUAL EFFECT OF HIGH-RISE BUILDINGS

ON DAIMYO GARDENS IN TOKYO:

THE CASE STUDY OF HAMA-RIKYU GARDENS

A Dissertation

by

BUKET SENOGLU

Submitted to Chiba University in partial

fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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Environmental Science and Landscape Architecture Course,
L.A. Program, Field of Landscape Planning
Department of Horticulture
Graduate School of Horticulture

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ABSTRACT

Daimyo gardens of the Edo period were created with an in-depth consideration of visual qualities. However, high-rise buildings, resulting from urbanization phenomena, have surrounded the gardens which became a problem in terms of heritage garden preservation. This study was conducted to reveal high-rise buildings' effect on daimyo gardens' visual qualities in human perception with the case of Hama-rikyu Gardens in Tokyo.

A sequential mixed method was used in the study. Expert interviews were carried out in the qualitative phase whereas three in-situ surveys were conducted with the garden visitors in the quantitative phase. Overall findings presented the negative effect of high-rise buildings on the garden's scenery as there was a consensus between the experts and the visitors whose perceptions pointed out for a necessity of heritage garden conservation plans.

Keywords: *Japanese garden, Edo period, traditional garden, strolling garden, daimyo garden, shakkei, borrowed scenery, high-rise building, environmental aesthetics, landscape preference*

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to my parents

Nesrin Şenoğlu & Şahin Şenoğlu

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CHAPTER 1.

INTRODUCTION

"No man ever steps in the same river twice, for it is not the same river and he is not the same man."

Heraclitus, 554 B.C.

As Heraclitus stated, everything in the universe is continually changing. As nothing stays the same, change in landscapes is also unavoidable. Development of landscape is a continuous and permanent process; belonging to the past but at the same time oriented towards the future (Micoulina 1993). By combining components of space and time, landscapes constitute social, cultural and political forms and acquire many layers of meaning over time (Leader-Elliot and Burke 2004).

According to Karl Marx, economic infrastructure defines the social and cultural structure of the societies (Lefebvre 1998: 39). Parallel with this phenomenon, socio-cultural structure defines spatial organizations of any human environments. As a representative of nature and human interaction (UNESCO 2012), cultural landscapes can be defined as the physical settings or spatial forms which have been shaped by the activities of a particular society on a landscape (Nunta and Sahachaisaeree 2010). In this context, cultural landscapes can be regarded as living landscapes which comprise a series of layers that have been shaped by the changing conditions over time; and each layer depicts the relationships between the human story and natural processes (Taylor 2008). As they display the human-nature relationship in a tangible space, they are highly related to the concepts such as place identity, or sense of place, cultural identity and socio-economic features of a society. Therefore, proper preservation and maintenance of these collective identities are considered essential.

After the Industrial Revolution that caused significant changes in socio-economic structure and spatial context of urban and rural landscapes, the preservation of cultural landscapes, heritage sites and gardens have become an important matter. Being one of the most important international organizations which develops strategies and methods for the conservation and proper management of cultural landscapes and heritage sites, ICOMOS (2013) categorizes the cultural landscapes into three: 1) clearly defined landscape that designed and created intentionally by humankind; 2) organically evolved landscape, and 3) associative cultural landscape. Falling in the first category, heritage gardens, the main subject of this research, are considered as “unique cultural phenomenon and carrier of traditional culture which contains tangible and intangible heritage elements in perfect harmony” (Abbas et al. 2016). Thus, heritage gardens have great importance as being living examples of aesthetic vision and lifestyles of past generations.

As an indispensable fact in floating time and space, however, the heritage sites such as the gardens - especially in today’s globalized and highly economically oriented mega-cities - are one of the most fragile and threatened assets on the surface of modernism. In this context, rapid social and economic development with poor urban planning systems may result in loss of these values that would regrettably lead to lack of place identity or “non-places” as anthropologist March Augé (1995) would call. Concordantly, Edward Relph (1976) argues that, in our modern era, an authentic sense of place is gradually overshadowed by a less authentic attitude that he called “placelessness” (Seamon and Sowers 2008).

Placeless landscapes could be anywhere as they have no genuine relationship to the places in which they are located (Davis 1990). Relph (1976) explains the reason for the emergence of such indistinctive places as “insensitivity to the significance of place” (Relph 1976: preface). This given insensitivity results in “undermining of place for both individuals and cultures, and the casual replacement of the diverse and significant places of the world with anonymous exchangeable environments" (Relph 1976: 143).

In this sense, it would not be incorrect to suppose that, with the capitalist modernism and globalization, many urban areas around the world have lost a significant amount of their unique identities that used to be embodied in their cultural landscapes, as those landscapes have been threatened due to careless planning and management policies. This situation has caused a dullness for many modern cities, and the city dwellers have suffered from unaesthetic city views and from loose place-attachment which is often caused by a lack of place identity.

Being one of the products of capitalist modernism and rising as a solution to socio-economic needs regarding scarce land in urban areas, high-rise buildings have become the determinants of aesthetic vision and identity of many metropolitan cities in the last decades. Currently being one of the tallest cities in the world, Tokyo has faced a rapid vertical growth due to complex social, legal, economic and political conditions and its skyline and identity have been reshaped by high-rise buildings (Perez 2014). Andrei Tarkovsky, a famous movie director, was no doubt right to film Tokyo's ultra-modern boulevards for his science fiction movie called *Solaris.* Since the movie depicts the future, Tokyo was a proper space to build an image of a futuristic city. However, it would be, indeed, deficient to call Tokyo as a merely modern city. As Nouët (1990: 7) states "*although its age cannot be compared with that of Kyoto or with many of the old cities of Europe, it is older than the cities of America. It is a city that has already played its part in history since the Edo period*." Thus, the city has many heritage sites from the earlier periods which facilitate recreational or spiritual amenities in the urban space such as the shrines, temples and the traditional gardens. Indeed, Tokyo is an interesting city with its combinations of traditional and modern, or intertwined -sometimes incongruously- Japanese and Western cultures. One can get easily puzzled or amazed to see how deep-rooted traditional heritage sites may be juxtaposed to artifacts of modernity such as glass and steel skyscrapers.

The contrast between Western and Eastern cultures have been an intriguing subject for various research areas. For instance, there are studies from the aspect of anthropology (Levi-Strauss 2011), cognition (Varnum et al. 2010; Chua et al. 2005; Masuda and Nisbett 2001), aesthetics (Bao et al. 2016) and spatial configurations (Miyamoto et al. 2006). Tokyo, in fact, is such a setting where the East meets the West, and therefore, this environment enables the studies to investigate the relationship of these contradicting cultures in one space.

By examining the perceptions towards the juxtaposition of two distinct visual and cultural aesthetics; traditional (Japanese) and modern (Western), this thesis attempts to analyze the conflict between two distinct periods in the same space: the Edo period and the contemporary. In order to do this, daimyo (feudal lords) gardens in Tokyo, which were inherited from the Edo period, were selected as the overall images, as these gardens reflect the contrast between traditional and modern as well as between natural (even though the gardens are human-made) and artificial due to the intrusion of high-rise buildings into their sceneries.

1.1. Background to the Research

In this study, social research techniques were used in an attempt to unveil how people think/feel when they look at a traditional landscape which has been affected by modern concepts. It is, therefore, essential to define some terms and concepts that will lead to the research problem, aim, and objectives.

1.1.1. Daimyo Gardens from Edo to Tokyo

In the Edo period (1603-1868), shogun and daimyo had political stability and prosperity. This situation let the establishment of large-scale gardens viable (Ito and Kawarada 2000), and it is supposed that more than a thousand gardens were built as palace gardens for daimyo (Shirahata 2016). Representing the economic and political power of the warrior class as well as their aesthetical tastes shaped by the culture, these gardens can be seen as a new place-making action of a particular social class.

These large-scale gardens were designed to enable the owner or guests to take a stroll in the garden that is called strolling garden (*kaiyu-shiki teien*). The strolling garden was designed along a path that rings around the garden to enjoy consecutive views. In this way, different vistas could be viewed from different observation points along a route (Ito and Kawarada 2000). Besides, these gardens made use of distant sceneries like mountains and incorporated them into the garden scenery by the design technique of borrowed scenery (*shakkei*). Space was composed pictorially according to principles of foreground, midground, and background, extending the limits of the garden visually and conceptually. Thereby, these gardens focused attention not only in internal features but also distant views with the borrowed scenery technique (Sullivan and Boults 2010) that was improved in the Edo period to accentuate the importance of visual culture to the appreciation of nature in gardens (Ito and Kawarada 2000). Both natural features, such as mountains, hills and plains, rivers, the ocean, and human-made structures, such as temple gates and pagodas could be used in these gardens as borrowed scenery (Nitschke 1993). The concepts of the strolling garden and borrowed scenery (*shakkei*) signify the deep consideration of visual quality that was given to the design of daimyo gardens. Moreover, the attitude of shakkei technique, that is to include distant sceneries -which are all superior to human nature- within the garden composition is thought to be in line with the philosophy of the aesthetic ideal called 'sublime.'

During the Meiji period, Japan was opened to the West and joined the ranks of the industrialized nations. Western ways of doing things threatened to overwhelm traditional values and practices, affecting landscape designing and planning, as well. Maintaining a captured view of a distant landscape became more difficult, however, when estates became surrounded by higher structures of the middle-ground landscape. Thus, garden design became alienated from the environment, further stimulating its independent development as fine art. As a result of their isolation from the surrounding environment, in clear contrast to beautiful gardens, the landscape beyond the garden boundary started not to be cared for at all, and it has turned into an urban landscape with a loss of environmental awareness (Ito and Kawarada 2000).

As a result of urbanization in recent decades, with various urban renewal and redevelopment projects, the land-use around the traditional gardens has changed, and an increasing number of high-rise buildings have settled down in the surroundings of these gardens. Daimyo gardens of the Edo period - which previously had background scenes of nature elements – have lost those scenes with the rapid change of cityscape in Tokyo. Since high-rise buildings have filled the air of the city, daimyo gardens had to replace their background views with those buildings.

1.2. Research question

High-rise building intrusion into the heritage Japanese gardens' scenery has become an issue from the viewpoint of cultural landscape conservation. Therefore, some studies have been conducted to analyze the visual impact of the visible surrounding buildings on heritage Japanese gardens, and the results have indicated that the visibility of external buildings has a negative impact on visual quality of the gardens and causes landscape destruction (Shinji et al. 1989; Arifin and Masuda 1997; Arifin and Masuda 1998; Koizumi and Ishikawa 2007; Shinobe 2012; Akasaka 2014; Lin et al. 2017). These studies addressed the issue by assessing the physical characteristics of the area. Their research had objective approaches in an expert-based nature with methods such as eye-tracking (Shinji et al. 1989); viewshed analyses (Koizumi and Ishikawa 2007); visual calculating (Arifin and Masuda 1997; Lin et al. 2017; Shinobe 2012; Shinji et al. 1989). On the other hand, the research with the subjective approach that addressed the issue by gauging user preferences (Arifin and Masuda 1998) is scarce.

When the user interpretations about the traditional gardens in Tokyo city are searched on the internet, it is possible to find a range of judgments on the surrounding building views, such as “*modern concept of shakkei*” (Anonymous 2016a) or appreciation to the contrast between modern and traditional (Anonymous 2015a; Anonymous 2015b; Anonymous 2016b). Furthermore, a master architect of *Shiodome* high-rise project (progressed from 1995 in the north to the west surroundings of Hama-rikyu Gardens in Tokyo) commented on an advertisement as “*we have a good view to the famous garden (Hama-rikyu Gardens). That is Shakkei!*” (Akasaka 2014). Although the usage of the shakkei word is found to be abused or a colossal mistake (Akasaka 2014), this statement of the architect is considered to be revealing that the traditional values, practices or terms are being replaced by the flow of time and space.

These divergent visions among the stakeholders point to the enduring discussion in the philosophy of aesthetics which is “whether the beauty is in the object or in the eyes of the beholder” (Meinig 1976). Taking the visual effect of high-rise buildings on garden sceneries as an example, although the studies with objectivist approach have found striking results about the negative effect of the external buildings on the garden sceneries, laypersons’ perceptions and preferences may differ according to their subjective qualities. In this sense, on the one hand, high-rise building views from a traditional garden can be seen as a symbol of damaged modernity and those buildings can be judged by causing a devaluation in the original spirit of the gardens. On the other hand, as Dupré (1996: 119) says, their daring heights may excite the mind and heart, and such feelings towards the modern buildings remind the concept of sublime. In today’s modern cities, people may have a tendency of being awed by the scale and power of such human creations, rather than nature’s (Parker 2015).

In this context, traditional daimyo gardens in Tokyo are considered to be good examples to display the shifting culture due to the modernization and urbanization phenomena which are shaped by capitalism. By the drastic change in the scenery of these gardens, the ideas of Shakkei and the Sublime seem to be altered from sheer nature such as Mt. Fuji, Mt. Tsukuba, rivers and the ocean into the human-made high-rise buildings. Today, the landscape of Tokyo is visible by bird's eye view from the windows of the high-rise buildings and these buildings got a significant opportunity by having a view to the beautiful traditional gardens from their windows which is both an aesthetic pleasure as well as an indispensable feature which increases the value of the land. On the other hand, the question of how observers assess the scenic value of these gardens from inside the gardens remains. Thus, the central question of this study is: "what is the effect of modern high-rise buildings around a historical heritage garden in the perception of its visitors?"

1.3. Significance of the research

Although the aforementioned former studies on the issue of the visual impact of the high-rise buildings on traditional Japanese gardens have conclusive findings indicating the negative effect of buildings, there seems to be a lack in their visual landscape quality assessment. Landscape quality assessment is considered to be an essential component of the planning and management of every landscape including historical heritage gardens, and it is divided into two core categories as objectivist (expert approach) and subjectivist (community perception-based approach) (Daniel 2001).

Meining (1979) states that "…*landscape is composed of not only of what lies before our eyes but what lies within our heads*." In this sense, what is perceived from a landscape or the preferences for a landscape are manifested by the interaction of the physical features of a landscape and subjective experience of an individual. Thus, perceptions of the users towards a landscape can be taken as the key indicators to assess and manage a landscape. Moreover, to explain the indicators of landscape perception and landscape preferences, landscape aesthetic theories may provide a basis for visual landscape quality assessment.

Regarding the heritage Japanese gardens, studies considering user perceptions towards the relationship between the garden and its surroundings in the spatial context (Arifin and Masuda 1998) has little interest as stated before. Besides, the studies which discuss the landscape aesthetics found in traditional Japanese gardens mainly focus on the inner configuration and inner visual qualities of the gardens (Yang 1988; Yang and Brown 1992; Inagami 2013; Inagami 2014). Furthermore, no previous research considered the user perceptions and preferences on the issue of high-rise building intrusion into the sceneries of Tokyo's daimyo gardens which are the most visually-effected ones by the intense urbanization at their surroundings.

In this sense, there seems to be a need for a study which would consider the issue of high-rise building intrusion into the heritage gardens' sceneries from the viewpoint of environmental aesthetics and aesthetic experience in the gardens. The present study is carried out with a subjective approach by gauging human perception for sceneries of daimyo gardens with a combination of quantitative and qualitative research methodologies.

1.4. Aim and Objectives

This study aims to reveal the effect of high-rise building sceneries in the daimyo gardens of Tokyo and understand how the environmental aesthetics of these gardens are affected by the surrounding high-rise buildings in case of human perception. The expected outcome of this study is to underpin the planning and management needs of these heritage gardens in the light of environmental aesthetics. Regarding the purpose, the objectives of this study may be arranged as follows:

i. To evaluate expert opinions about the high-rise effect on daimyo gardens.

ii. To reveal the relationship between daimyo gardens and landscape aesthetic theories.

iii. To evaluate the garden visitors' perception and attitudes towards the visual effect of high-rise buildings on a Japanese heritage garden.

iv. To determine the management needs to conserve the visual quality of the daimyo gardens in Tokyo.

1.5. Thesis Structure

This research is divided into eight chapters. Chapter 1, as presented, includes research background, research problem, research significance, aim, and objectives.

Chapter 2 reviews the relevant literature to help set up the conceptual foundation. It explains the design features of Japanese daimyo gardens starting with a brief historical review of previous prototype gardens. It discusses the urbanization phenomena and its effects on urban forms and particularly on historical gardens in Japan. After a review of landscape perception and environmental aesthetic theories, the chapter presents the conceptual framework and hypotheses of the research.

Chapter 3 explains the research methodology for each sequential step, presents the research design and introduces the study area.

Chapter 4 presents the qualitative phase of the research. In this chapter, the results of expert interviews which were done to gain a better understanding of the research problem is presented and discussed which constitutes a basis for the quantitative phases of the research.

Chapter 5, Chapter 6, and Chapter 7 present the quantitative empirical research studies that were conducted in Hama-rikyu Gardens. Chapter 5, discusses the empirical study carried out regarding one of the environmental aesthetic theories called prospect-refuge theory in the aesthetic experience of visitors. Chapter 6 presents the results of a preliminary questionnaire on the effect of high-rise buildings in the visitors' perception. Chapter 7 presents the major questionnaire which was carried out to examine visitors' perception of the high-rise building effect with both psychophysical and psychological models.

In Chapter 8, the results of the research are reviewed in a holistic manner, and the research hypotheses are met in light of the empirical studies' results. The chapter also presents the implications of the research, its limitations and arises new research questions for future studies in related issues.

CHAPTER 2.

LITERATURE REVIEW AND CONCEPTUAL FOUNDATION

2.1. Japanese Gardens in Time and Space

As a part of human life, nature has always played a critical role for human beings and affected their thoughts, feelings, the way of livings. Gardens, on the other hand, stand at the junction of nature and culture. Neither purely nature nor culture, gardens demonstrate both of them in the form of human art (Nitschke 1993). Therefore, it is essential to seek the human-nature relationship in a culture to understand the underlying meaning of the design techniques and the way of usages of the gardens.

There is a deep interconnectedness of culture and nature in Japanese thought which have shaped visions of national identity. By contrast to Western societies with a culture in which humanity is superior to nature, Japan had a view of the human being as equal to and part of nature. According to Yasuda (1989: 7-8), the animist vision embodied in Shintoism, Japan's indigenous religion, may be a grand model that offers an answer to the pressing issue of how to preserve the global environment, and how to let nature and man coexist (Morris-Suzuki 1997). Shinto deities, known as *kami,* are believed to dwell in natural features such as mountains, rocks, and trees (Locher 2010:17) and the divine spirits are believed to be the descendants of the various nature elements (Motonaka 2009). Therefore, Japanese people have worshipped nature and demonstrated their deep respect and admiration to it by daily rituals and seasonal festivals (Locher 2010: 17). Buddhism, which was integrated into Japanese culture in the 6th century, too, contains strong respect for nature. Buddhist concepts have become related to Japanese aesthetic ideas which have inspired writers, artists, architects, and garden designers. For instance, the terms "*mono no aware*" and "*mujo*" express an awareness of the transience of the aspects of nature (or life) that elevates the appreciation of their beauty and evokes a gentle sadness at their passing (Lee 1995: 42; Locher 2010:17).

Nitschke (1993) states that the history of the Japanese garden is the history of humans' search for their place within nature and thereby, the gardens are a reflection of the search for one's own self. The antecedent of the garden in Japan was the primeval place of animistic worship (Vilhar and Anderson 2008: 7). The natural places and objects consisting of rocks, springs, streams, and vegetations have the same components and materials as those found in Japanese gardens constructed in later periods. In other words, the worship of nature which ancient Japanese people possessed has been taken up by following concepts of Japanese gardens, imbuing them with great spiritual meanings (Motonaka 2009).

Beginning with simple pebbled covered plots on the beach or in the forest, created for ceremonies honoring Shinto deities, Japanese gardening as an art form developed over thousands of years (Young and Young 2005) and they have evolved into a variety of styles and served a variety of purposes by the effect of socio-economic conditions of their time. Therefore, before proceeding to describe daimyo gardens of the Edo period which is the focus of this study, some reference to the history of its predecessors will not be out of place.

During the Nara period (710-794), there was an extensive cultural connection between Japan and China. It is, therefore, commonly accepted that the concept of gardens and landscapes intentionally shaped for aesthetic reason was introduced to Japan in the 6^{th} century from the Chinese mainland via Korean Peninsula (Locher 2010: 151; Motonaka 2009; Conder 2002). According to the archaeological evidence, scroll paintings and poems, there were pond-and-island type gardens that imitated real and mythical natural vistas in the style of Tang Dynasty gardens (Sullivan and Boults 2010: 47; Vilhar and Anderson 2008: 7).

In the Heian period (794 – 1185), gardening was a gentleman's art, and the Heian nobility competed to display perfection and elegance in their gardens (Vilhar and Anderson 2008: 7). The main buildings called *shinden* in which nobles lived were accompanied by *Shinden-zukuri* gardens, a pond-and-island garden type. These gardens were settings where the nobles enjoyed their aesthetic visions with poetry contests, flower-viewing festivals, boating parties, and musical events (Masuno 2003; Sullivan and Boults 2010: 48). The gardens were bright and relaxed spaces featuring large ponds with islands for boating or viewing (Earle 2000: 7). Heian period gardens imitated nature's outer form (Nitschke 1993: 161), and wild landscapes were reproduced in these gardens (Ito and Kawarada 2000). These gardens, whether residential or religious, often attempted to re-create the delights of the paradise offered by Amida Buddha (Earle 2000: 7).

In the Kamakura period (1185 – 1334), gardens remained under strong influence from the earlier style. The scale of the residential gardens was smaller compared to the ones in the Heian period. However, both residential gardens and temple gardens followed the Paradise style pattern (Kuitert 1988).

In the Muromachi period (1335 – 1573), the Heian garden type, pond and island gardens, continued to flourish during the early years. However, these gardens were designed to be enjoyed on foot rather than on a boat. On the other hand, this period was the time when famous *kare-sansui (*dry landscape gardens) emerged as a new prototype in Japanese garden art. These gardens were not designed as pleasure gardens like the previous prototypes. Instead, they were the ideal places for meditative contemplation (Nitschke 1993: 68). With the usage of sand, pebbles, and rocks, a whole world of spiritual thought and vast landscapes were represented in small spaces. Garden elements were abstracted and reduced to their essential characteristics (Vilhar and Anderson 2008; Sullivan and Boults 2010: 61). *Kare-sansui* gardens were designed to be viewed from fixed viewpoints such as study alcoves (Masuno 2003: 19).

In the Momoyama period (1574 – 1603), a new prototype garden emerged which is called tea gardens. The detached teahouse brought the essence of the countryside into the city, providing sophisticated urban dwellers an escape to an ideal of romanticized nature (Sullivan and Boults 2010: 102). Tea gardens, or r*oji*, was the preparation space where guests purify their minds before entering the teahouse (Masuno 2003: 52-53). These gardens were designed for motion, with careful consideration given to a sequential discovery of landscapes (Ito and Kawarada 2000). Wells, basins, gates, and lanterns were prevalent in tea gardens. The articulation of the path formed by stepping stones provided a model for the design of strolling gardens of the following Edo period (Sullivan and Boults 2010:102).

2.1.1. Daimyo Gardens of the Edo period

Tokugawa Ieyasu, the first *shōgun* (military dictator) of the Tokugawa *shōgunate,* established Edo (later Tokyo) as the military capital which was the event to begin the Edo period (1603 – 1867). This period characterized by two and a half centuries of relative peace and stability (Young and Young 2005).

Tokugawa shōgunate issued a series of strict edicts to control all aspects of society. For instance, Japan was isolated from international contact except for a small Dutch trading colony near Nagasaki (Sullivan and Boults 2010: 111). However, this isolation helped to develop the cultural uniqueness that is also found in the gardens (Ito and Kawarada 2000).

In the 17th century, gardening was a booming business in Japan, and garden design became a respected, secular profession (Sullivan and Boults 2010: 112). The gardens in this period were designed by professional garden artists called *niwa-shi* and were usually commissioned by *daimyo* (feudal lords) (Nitschke 1993: 169). The feudal government of the Tokugawa shōgunate promulgated an ordinance of alternate residence (*sankin kotai*) for the purpose of controlling the daimyo. Under this alternate residence system, daimyo had to live alternately (every one, two or three years depending on their status) in their domains and Edo (later Tokyo) and had to leave their families in Edo as hostages during their absence (Nouët 1990: 71; Sorensen 2002: 16). Having one residence in Edo, and another one in their hometowns, each daimyo was expected to maintain two luxuriously equipped residence. Therefore, the number of gardens considerably increased (Kuitert 1988).

The political stability and wealth among the ruling warrior class made the construction of large-scale gardens possible again after the Heian period (Ito and Kawarada 2000). However, the gardens of the Edo period were even larger (Nitschke 1993: 169). The gardens of daimyo in strolling type (*kaiyu-shiki-teien*) was a new prototype in Japanese garden art (Nitschke 1993: 169).

As their predecessor from the Heian period, strolling gardens were created to imitate outer forms of nature (Nitschke 1993: 169). Various elements of previous garden prototypes were unified in the spatial organization of these gardens. For example, "the ponds, islands, winding streams and waterfalls of Heian boating gardens, the lakeside footpaths and hills of the smaller-scale Kamakura and Muromachi strolling gardens, the fixed indoor vantage points of Muromachi gardens as well as elements of the Momoyama tea garden" (Nitschke 1993: 182). However, unlike some predecessor prototypes that are related strongly to religious purposes, the daimyo garden was a secularized one (Shirahata 2016). Religious edifices, when included, served a purely decorative function (Young and Young 2005: 124).

The goal of the daimyo gardens was to demonstrate power and wealth of their owners and to entertain guests by providing a constantly changing landscape composed of water, bridges, lanterns, shrubbery, rocks, and flowers (Young and Young 2005:124). Daimyo used this type of garden as a place for social exchange, and shōguns frequently made visits there for feasts. In other words, it can be said that this type of garden developed as a manifestation of the sense of the beauty of Imperial family members and daimyo's amusements (Masuno 2003: 62-63).

2.1.1.1. Spatial configuration of daimyo gardens

The strolling gardens of daimyo were organized along a path that takes the visitor past a sequence of changing landscapes, a recreation of famous sights. These sights may be either real geographical elements which are respectfully recreated on a smaller scale or imaginary places mentioned in poems (Nitschke 1993).

With a large space at their disposal, garden designers used creative ways to provide interest and appreciation both to nature and the garden itself. The spatial configuration of these gardens did not consider only the inner scenery, but their surroundings were also coherent part of the gardens. Far views such as mountains, hills, plains, rivers or ocean took an active part in the garden scenery. Moreover, some other design techniques that creates an unusual effect on the scenery of the gardens were used in their spatial configuration.

2.1.1.1.1. Miniaturization (*Shukkei*)

Stroll gardens were designed to recall the natural scenery of Japan or sometimes China. Since travel within the country was restricted by the shōgun, the publication of books illustrating the famous sights of Japan became popular. The books contained colorful woodblock prints of scenes such as Mt. Fuji, maple-covered hillsides, and the eight-bridges river system (Sullivan and Boults 2010: 111). The stroll gardens of the Edo period referenced these famous landscapes and natural places of scenic beauty (Young and Young 2005: 124). Creating reduced-scale replicas of natural scenery, this technique became to be known as *shukkei*, or miniaturization. One of the best examples may be the strikingly realistic miniature of Mt. Fuji in Suizen-ji Park in Kumamoto (Nitschke 1993: 182) and the re-creation of Ama-no-hashidate in the Katsura Detached Palace garden in Kyoto. In this way, these gardens were designed to have a number of miniature gardens standing around a large pond placed in the center of the grounds (Masuno 2003: 62-63). As one walk around the pond, the garden provides a place where one can take an excursion and see many different kinds of places (Young and Young 2005: 124).

2.1.1.1.2. Hide-and-reveal (*Miegakure)*

The principle of *miegakure* (hide-and-reveal) adds an element of anticipation and surprise to the experience of strolling gardens. As the observer moves along the path, views of both near and far suddenly appear (Sullivan and Boults 2010). Hedges, structures, trees and some eye-catchers such as lanterns block long-range views and provide an ever-changing vista along the route (Ito and Kawarada 2000; Young and Young 2005: 124). The views in the gardens open and close repeatedly. For example, artificial mountains (*tsukiyama*) are occasionally designed to cut a full view of the water's surface. Other times, large clearings are planned to show the overwhelming wide surface of the water. The views taken from the teahouses in the garden were also planned carefully. A beautiful view from each room was always secured, but the same view would never be seen from two different rooms, and a full view of the garden would never be shown (Masuno 2003: 62-63).

2.1.1.1.3. Borrowed Scenery (*Shakkei*)

Borrowed scenery (*shakkei*), as mentioned before, is a design technique of incorporating distant landscapes into the garden composition (Sullivan and Boults 2000). By utilizing from the surrounding geography or outstanding features of the surrounding environment, this technique can be understood as a tool to present the human-nature relationship as well as the spatial relationship of the gardens with their surroundings which in turn profoundly affect the visual quality and the meaning of the place.

Kuitert (1988) explains that the borrowed scenery emerged to the gardens in the urban areas to recall the romantic appreciation of the natural sceneries which is found naturally within the countryside. According to Ito and Kawarada (2000), the design technique of *Shakkei* (borrowed scenery), to bring distant views into garden settings, was fully developed during the Edo period (Ito and Kawarada 2000) and it was employed in all types of Edo gardens except the tea garden (Nitschke 1993: 180).

According to Ito (1981), borrowed scenery, as a term, began to be used at the beginning of the 17th century in Chinese writings as *chieh-ching* in Chinese and in the 19th century in Japan as *shakkei*. By that point, however, the actual technique of *shakkei* had long been employed in Japanese garden design. Tenryu-ji Temple (Kyoto)'s garden which dates back to the Kamakura period may be the earliest and best-known example to the use of borrowed scenery technique by drawing Mt. Arashiyama into its composition (Nitschke 1993: 180).

Teiji Ito (1981) notes that the original Japanese term for the technique of *shakkei* was *ikedori*, which literally means "to capture alive." According to Ito (1981: 15), the term *ikedori* implies that when something captured alive, it must invariably remain alive, just as it was before it was captured. This situation explains the point of view of former garden designers for whom every element of the design - water, distant mountains, trees, stones - was a living thing which is a worldview highly linked to Shintoism. Relatedly, Shinji (1986) considers that the technique of shakkei makes the best use of nature and it represents the Japanese view of nature. Therefore, the practice of borrowed scenery involves more than just a visual appreciation of the landscape. Nature is reinterpreted; the picture holds a message (Sullivan and Boults 2010: 112).

Natural features such as mountains, hills, and plains, sky, or sometimes human-made structures such as temple gates and pagodas were deliberately incorporated into the garden composition by the borrowed scenery technique (Nitschke 1993: 180). By this technique, the foreground, middle ground, background, and far distance were carefully organized and incorporated to each other for the overall composition of the landscape seen from inside the garden (Shinji 2015). While the foreground itself plays a minor role, the middle ground is the site of carefully-positioned objects serving to link foreground and background. The trees and hedges at the background create the frame through the distant scenery which is 'borrowed' (Nitschke 1993: 180). Occasionally, these frames were also used for covering unattractive urban environment at the surroundings of the gardens to present undisturbed, desirable distant scenery (Ito and Kawarada 2000). In addition to improving the composition of the gardens, the *shakkei* technique also helped to create an illusion as if the garden was larger than it really was. In this way, the limits of the gardens were extended both visually and conceptually by the borrowed scenery (Young and Young 2005: 124; Sullivan and Boults 2010: 112).

Some examples of the borrowed scenery technique remain today. For instance, the garden of Ninnja-Temple uses a five-storied pagoda as borrowed scenery which is a human-made object. The garden of Entsu-ji temple, on the other hand, captures Mt. Hiei. The garden of Shoden-ji Temple, likewise, borrows the same mountain (Nitschke 1993: 180). Mt. Hiei, being Kyoto's highest peak (848 m.), is the most prominent mountain in the region. It is regarded as a protective shield from 'bad winds' or devils. Therefore, the mountain has been recognized as sacred. The symbolism embodied in the mountain affords a spiritual and historical crossing between the mighty, the 'untouchable' sacred mountain and the human as the experiencer (Ronnen 2012). The experience derived by viewing the mountain from inside the garden, therefore, once again evokes the aesthetic experience of 'sublime.' As Burke (1757; 2009) notes in his *Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful,* sublime things, which are superior to human nature such as mountains, a cliff face, or the ocean, are impressive and awe-inspiring. In parallel with Burke's philosophy, by looking at a mighty mountain from a safe viewpoint, one may feel insignificant in the presence of the mountain, and this condition may result in a state of 'delightful horror' which paradoxically delight the human being.

2.1.2. Daimyo Gardens of Edo City

Edo (later Tokyo) achieved prominence after it became the military capital of Japan in the early 17th century and quickly developed into a metropolis with large mansions and gardens belonging to daimyo families (Young and Young 2005: 156). Shirahata (2016: 101) estimates that the number of daimyo gardens in Edo easily exceeded one thousand; therefore, the city of Edo was full of gardens with diversified activities (Ito and Kawarada 2000). The number of daimyo residences which were equipped with grand gardens might be the reason why Edo was called a 'garden city' (Jinnai 1995).

The views from and within the city were carefully integrated into its local natural environment (Jinnai 1995: 41-42). The gardens in the city, likewise, took full advantage of the native landscape and terrain of the city and made use of distant sceneries like mountains and incorporated them into their sceneries (Shirahata 2016). In Edo stroll gardens, views were mainly to Mt. Fuji and the harbor (Sullivan and Boults 2010: 112) as well as to Mt. Tsukuba, Boso Mountains, and rivers.

Due to the restriction of the feudal system, the social behavior of the of the daimyo was in a sense psychologically enclosed during the period. In this sense, in addition to its unique contribution to gardens' visual quality, borrowed scenery technique enabled the daimyos or their guests to experience distant landscapes which might fulfill their desire to connect to the outside world (Shinji 2015). Thereby, the fine art of gardening gained visual diversity through this technique. However, these carefully captured distant landscapes were vulnerable to a variety of changes, mainly occurred in the environment that accompanied urbanization (Ito and Kawarada 2000).

With the collapse of the feudal system at the start of the Meiji era (1868 – 1912), some of these gardens were converted into public parks - a status they continue to be enjoyed today (Nitschke 1993: 182). Most of the estates belonged to the daimyo were destroyed during the Second World War, but four that remain and managed by Tokyo Metropolitan Park Association – Koishikawa Kōrakuen, Rikugien and Hama-rikyu, and Kyu Shiba-rikyu – provide some idea of the grandeur of Tokyo's traditional gardens (Young and Young 2005: 156). Before proceeding to the effects of urbanization on these gardens, to give a few details about their history and design principles would be fitting.

2.1.2.1. Koishikawa Kōrakuen

Early in the 17th century, in 1629, Tokugawa daimyo Yorifusa Mito was given a piece of land by the ruling Tokugawa shōgun Iemitsu. The plan was to create a suitable tea garden that could be used to entertain important guests of the shōgunate. Yorifusa's idea expanded to a grand landscape garden, the likes of which had never been built in Edo. The garden was completed in the lifetime of his successor, Mitsukuni who get aid from a Chinese Confucian scholar (Shu Shunsui) and they named the garden as "Kōrakuen" which means "Garden of Later Pleasure," a name inspired by a Chinese saying that "*the lord must bear sorrow before the people and take pleasure after them*" (Vilhar and Anderson 2008). Being the oldest daimyo garden of the Edo city, Koishikawa Kōrakuen became a model for other daimyo estates (Sullivan and Boults 2010: 118).

The garden is organized around a pond, and it contains a large turtle island, various bridges, and many imported rocks. The garden's stroll path takes the visitors to numerous sights designed in miniature to imitate famous and scenic sites both in China and Japan. Since the garden was dedicated to Confucius thought, Chinese influences can be seen in several features of the garden (Sullivan and Boults 2010: 118; Young and Young 2005: 156).

Designed by the Chinese scholar Shu Shunsui, steeply arched Engetsukyo Bridge (Round Moon) is famous for its reflection in the water, resembling a full moon (Young and Young 2005:156). A path in the garden namely 'Nobedan' which is paved with various stones is also a Chinese gardening technique. The temple in the garden, Tokujindo-ji, was inspired by Chinese literature. Covered by Ruscus bamboo, a 30-foot-high artificial mountain in the garden namely Mt. Shorazan, resembles Mt. Lushan in China. Being another example to miniaturization technique in the garden, West Lake embankment is a re-creation of Xi Hu Lake in Zheijang (China). The large pond in the center of the garden, which has two islands namely Horajima and Chikubujima, was modeled after Biwa Lake in Shiga Prefecture (Kyoto) (TMPA 2008a). According to Conder (2002), many features of the garden named after Japan's famous scenic places. For example, in the south of the lake, the river Tatsuta is an imitation of its natural model. On the west, Oigawa river is the imitation of the real Oigawa river which runs through Arashiyama, Kyoto. A cascade, Otowa-no-taki, named after a famous Japanese waterfall. Furthermore, there is an artificial hill in the garden called Fuji-no-yama. As its name suggests, this conical artificial hill was made to resemble Mt. Fuji. The white azaleas on the top of the artificial hill (Fuji-no-yama) reference to the snowy cap of Mt. Fuji. Also, a cascade at the head of the lake namely Kiyomizu-no-taki was built as an imitation of Kiyomizu-dera in Kyoto (Conder 2002).

Being a highly appreciated asset in Tokyo, the garden today is only a quarter of its original size and squeezed between the Tokyo Dome and office towers (Vilhar and Anderson 2008; Young and Young 2005: 156). It has been designated a Special Historical Site/Special Place of Scenic Beauty in 1952 by the national government under the Law for the Protection of Cultural Properties (TMPA 2008a).

2.1.2.2. Rikugien

The land of where Rikugien stands today was given to daimyo Yoshiyasu Yanagisawa in 1695 by the fifth shōgun Tsunayoshi Tokugawa. Yoshiyasu spent seven years to construct the garden with paths, artificial hills, and pond. As it was a flat part of Musashino land, he had to dig a pond, build up hills, and bring in water from the Senkawa river to supply the pond (TMG 2015).

Rikugien's name refers to six principles of *waka* (classical short poems). Reflecting the depth of its owner's literary knowledge, the garden consists of eighty-eight sights named after popular settings praised by *waka* poems in Japanese and Chinese literature (Ito and Kawarada 2000). The garden is organized around a large pond. The southern shore of the pond namely 'Deshio no Minato' was built to imitate the scenery of Wakanoura Bay in Japan as the site's name was inspired from an ancient Japanese waka poem: "*A crane cries sadly as the moon rides and tide washes the shores of Wakanoura.*" A path in the garden called 'Sasaki no michi' was another site inspired and named after a Japanese waka poem which is "*My beloved is to come tonight. The spider's sure movement seems to foretell it.*" The island and rock composition on the pond represent Horai Island where the immortals are believed to live according to Chinese literature. The two hills on the central island (Nakanoshima) represent man and woman and wish for good relationship and prosperity for the descendants. The garden also contains an artificial hill called 'Fujishiro' whose summit provides an overall view, and teahouses, resting pavilions, earth-covered bridge (Young and Young 2005: 156).

After the Meiji Restoration, the garden became the property of the Iwasaki family, founders of Mitsubishi Corporation. In 1938, the garden was donated to Tokyo City and opened to the public. After then, it was designated a special site of exceptional beauty and an important cultural asset in 1953 (TMPA 2008b).

2.1.2.3. Hama-rikyu

Hama-rikyu Gardens is a typical stroll-type (*kaiyu-shiki teien)* daimyo garden of the Edo period (Koizumi and Ishikawa 2007; Shirahata 2016). The garden was constructed in 1654 by daimyo Matsudaira Tsunashige. The estate later passed to Tsunashige's son, Ienobu, who became the 6th shogun of Tokugawa. Once Ienobu moved into Edo castle as the heir apparent, the estate took on the character of a shogunal retreat (Shirahata 2016: 46). The garden's current form was completed around the time of the 11th shōgun, Ienari (1773–1841) (TMG 2008a). Its status as a shogunal retreat made it unique among daimyo gardens as it hosted social occasions not only among members of the samurai class but also between the samurai and the aristocracy from Kyoto (Shirahata 2016: 47).

Due to its topographical conditions and gorgeous size, the garden is flat-looking despite the presence of artificial hills, and there is an open feeling in the overall landscape. Shirahata (2016: 47) notes that "*the flat, wide-open setting must have seemed quite novel to the court aristocrats (who visited the garden as guests of shogun) when compared with the more deeply contoured Kyoto gardens to which they were accustomed*." Along with appreciating the scenery from the teahouses or while strolling in the garden, it was a place for entertainment and socializing. Sessions of poetry, boating, falcon hunting, duck hunting, horse riding, fishing from Edo bay were some of the activities done in this garden. Furthermore, Hama-rikyu encompassed medicinal herb garden, vegetable garden, tea field, and rice paddies on the grounds (Shinji 2015).

The present garden features a stroll around a pond, artificial hills, bridges connecting the islands, a flower garden, teahouses, and duck-hunting areas. The pond (*Shoiri-no-ike*) which has a style to draw in seawater and change its appearance by ebb and flow of tide is divided into two parts (*Dai-sensui* and *Yokobori* ponds) with a bridge (*Naka-no-hashi*). The pond is the only remaining seawater pond from the Edo period within Tokyo (TMG 2008). Saltwater fish such as striped mullet, young sea bass, goby, and eel inhabit the pond. Also, different seasons bring an array of different wild birds that fly in and live around the pond, making it a refuge and oasis for the creatures (TMPA 2008c).

There are six artificial hills (Mt. Fujimi, Mt. Hakkei, Mt. Ochin, Mt.Hinokuchi, Mt. Shin-hinokuchi, Mt. Hebi) offering different panoramas of the garden. Mt. Fujimi, located on the south side of the Dai-sensui pond, is an important viewpoint where one can have a view of the area around Dai-sensui pond. As its name presents, "Fuji-viewing hill," the top of the hill once provided an uninterrupted prospect of Mt. Fuji, and it also featured distant views of mountains of Boso and Mt. Tsukuba (Conder 2002: 33; TMGBCPD 2017). Mt. Hakkei which literally means "Mountain of Eight Views," is also an important viewpoint overlooking a wide panorama of the garden. According to a legend, its name comes from the following eight views in the old days: 1) Nakajima-no-ochaya (teahouse) with rising autumn moon, 2) Sanjougaoka hill with night rainfall, 3) Mt. Fujimi with snowfall, 4) Salt field with geese landing, 5) Mt. Ochin lit up by fishermen's torch, 6) Kannondo temple with evening bell ringing, 7) Umite-no-ochaya (teahouse) with a sail boat coming back to the harbor in the background, 8) Tsubame-no-ochaya (teahouse) lit by sunset. Located on the east side of the Shiori-no-ike pond, Mt. Ochin, is an important viewpoint where one can overlook the area surrounding Dai-sensui pond and also Yokobori pond with Tokyo Bay at the background. In the past, one could enjoy the 360-degree landscape; Mt. Fuji in the west, Edo Castle in the north, Mt. Tsukuba in the northeast, the Edo Bay and boats with white sails in the east to south, and Boso Peninsula behind the Edo Bay in the south could be seen from the top of this artificial hill. Other two artificial hills, Mt. Hinokuchi and Mt. Shin-hinokuchi are located on the south side of the garden, opposite to each other and divided with the sluice gate. Offering a view towards Tokyo Bay today, both hills were praised in old writings with their scenic beauty as one could have a view of the uninterrupted ocean and Boso peninsula supposedly (TMGBCPD 2017).

There are four teahouses in the garden presently. Nakajima-no-ochaya (teahouse) situated on Nakajima island in the tidal pond, provides a good view of the pond and its surroundings. Once having a view of the far-off Boso peninsula, it was used to get away from the heat of summer nights, and to watch the moon. Matsu-no-ochaya (Pine teahouse) and Tsubame-no-ochaya (Sparrow teahouse) and Taka-no-ochaya (Hawk teahouse) are located on the east side of the Dai-sensui pond. Taka-no-ochaya used to be the resting place for falconers, and there was also a falcon room where falcons could be kept (TMGBCPD 2017). The teahouse was destroyed in the Second World War and has been rebuilt in April 2018. According to Shinji (2015), looking over Shioiri-no-ike Pond from Matsu-no-ochaya teahouse, one could have a view to Shinagawa river and Mt. Fuji in the far distance before high-rise buildings lined up in the surroundings.

After the Meiji Restoration (1868), the garden became a detached palace for the Imperial family and was officially named Hama-rikyu, which literally means ‘a detached palace on the coast.’ In 1945, the Imperial family donated the garden to Tokyo Metropolitan Government, and it was opened to the public in 1946. The garden was declared a Special Place of Scenic Beauty and a Special Historic Site in 1952 by the Cultural Properties Protection Law of Japan (TMPA 2008c).

2.1.2.4. Kyu-shiba-rikyu

Kyu-shiba-rikyu garden is a typical Edo period daimyo garden with a pond surrounded by a strolling path. The area used to be a part of Edo Bay until it was reclaimed in around 1655 to 1658 and became the residence of a high-level official, Tadamoto Okubo in 1678. The garden was constructed by a master gardener from the land owner's homeland of Odawara and was named as “Rakujuen.” At the end of the Edo period, the land was owned by the Kishu-

Tokugawa family (TMG 2008b).

The pond (Sensui) in the garden was once a tidal pond having inlets from the ocean just like Hama-rikyu Garden’s pond, though the ocean does not supply water to the pond anymore. There are two small islands in the pond namely Nakajima and Ukishima. There is also a sandy beach-like area (Suhama) in one corner of the pond. Nakajima, one of the islands in the pond, was designed to be the visual focal point of the garden. It represents Penglai Mountain which is a mountain where immortal spirits are believed to reside according to a Chinese legend. The lake called Seiko-no-tsutsumi and also the stone bridge on the lake were modelled after the scenery of Seiko Lake (Xi Hu in Chinese) in Zhejiang, China. The garden contains a “waterless waterfall” called Karetaki. This rock formation was designed to resemble a waterfall in a mountain gorge. The bottom of the symbolic stream also functions as a footpath for viewing the garden. As the other stroll type daimyo gardens, Kyu-shiba-rikyu also has artificial hills. These hills are connected to each other which creates a scenery of a mountain chain. The highest of these, namely Oyama (large hill), provides a good vantage point to overlook the garden scenery (TMPA 2008d). Conder (2002: 33) notes that the hills and mounds were adorned with arbors from which sea views across the Edo Bay could be obtained when he saw the garden probably around 1877. However, today the garden is surrounded by high-rise buildings from all the corners.

After becoming the property of Arisugawa-no-miya family in 1871, the garden was owned by the Imperial Household Ministry in 1875 and became to be known as Shiba-rikyu (detached palace) from that time. The garden was donated to Tokyo City in 1924, opened to the public and designated a place of scenic beauty and historical interest in 1979 (TMPA 2008d).

2.2. Urbanization of Tokyo

Edo (later Tokyo) was a small farming and fishing village during the medieval period, and it was selected as the site for a castle in 1457 (Brown 2013: 111). At the beginning of the 17^{th} century, when the shōgun Ieyasu chose Edo as the military capital, the city was the largest alluvial plain in the country and had great potential for growth (Sorensen 2002: 16). According to Matsui (2018), when the time Edo castle was built, the urban structure was laid on the principle of proper arrangement of the four guardian Gods, according to the way of Yin and Yang philosophy (*Onmyodo*) and therefore, it was another reason for the city to be a suitable site for the ruling shōgunate. Being a mixture of natural science and occultism, *Onmyodo*, or the way of Yin and Yang philosophy acquired specific conditions for an auspicious and suitable site for a city. Each of the four Gods is believed to dwell on a direction where there is a flowing river in the east (Azure Dragon), a broad road in the west (White Tiger), a pond in the south (Vermilion Bird), and mountains/hills in the north (Black Tortoise). In the case of Edo, Naito (2007) identifies the Hirakawa River as the Azure Dragon, Edo Bay as the Vermillion Bird, Tokaido road as the White Tiger, and the Kojimachi Plateau as the Black Tortoise (Matsui 2018).9

Unlike the Imperial capital (Kyoto), Edo did not follow the symmetrically planned grid system of the Chinese imperial style. Nouët (1990: 7) describes the urban planning of Edo as an agglomeration that has grown up over centuries around a busy center, which is the Edo castle where the Emperor resides today. Therefore, being a castle town determined the urban planning of Edo from the very beginning and have continued to have significant effects on urban development until the present (Sorensen 2002: 13).

Feudal regime acquired a rigid class system based on an idealized Confucian model. There were four main classes, each hereditary: samurai (including daimyo), peasants, artisans, and merchants. As it was the ideals of a castle town, the city was planned according to the concept of spatial separation of social classes (Sorensen 2002). The city grew rapidly around shōgun's castle which was surrounded by a ring of daimyo and samurai estates, then loosely by temple grounds and shrines; beyond that commoners' districts, and finally farmland and the sea (Brown 2012: 113-4). As Seidensticker (2011) frankly described, there was a distinct difference between the appearance of environments that the commoners lived (low city, *shitamachi*) and the domains of the ruling class (high city, *yamanote*). The commercially and culturally vital commoner city was busy, noisy, crowded and dusty. Politically powerful, the samurai city was spacious, leafy, quiet and verdant. The commoner city was planned in regular grids with straight streets on flat ground. The samurai city was much less planned with winding roads fitting organically into the hills and valleys (Sorensen 2002: 38). Little wooden houses were crowded together along narrow roads (Nouët 1990: 86).

Many parts of Edo were extraordinarily green and wooded. This was particularly true of the large temple districts such as Zojoji in Shiba and Kaneiji in Ueno, whose grounds were open to all classes. Almost every neighborhood had one or smaller temples or shrines whose trees provided shade and beauty as well. The samurai classes lived in what can be called garden compounds, but movement through their neighborhoods was restricted, so their greenery was not a shared amenity (Brown 2013: 117). The Western concept of a public park was unknown until the 19th century in Japan. Instead, temples and shrines served as public spaces that were filled with green plants and tall mature trees, and by providing places for large crowds to congregate and for festivals and performances, they placed a tremendously important role in the pre-modern city (Sorensen 2002: 31).

The surrounding landscape of Edo was maybe not as picturesque as the environs of Kyoto (Sullivan and Boults 2010: 112). Nevertheless, as a result of a deep interconnectedness between nature and culture, Edo was a city of views (Brown 2013: 120). Edo city was carefully integrated into its local environment. It was organized with a strong centrifugal logic in relation to its natural surroundings and topography. Mt. Fuji and Mt. Tsukuba, for instance, looming far in the distance, maintained a strong presence in the city dweller's consciousness and as repositories of symbolic meaning (Jinnai 1995: 41-42). One of the most popular urban space design models in this period was *Yama-ate*, meaning to direct a street axis toward a particular mountain (Yoh 1992). From the beginning, the planners considered both the nearby hills and distant landscape when laying out the major streets so that many streets of Edo were aligned to provide urban vistas of Mt. Fuji to the west, Mt. Tsukuba to the north, and scenic hills and river views around town that made Edo a 'city of views' (Brown 2013: 120).

As Seidensticker (2011: 32) states, "*looking at the pictures of Edo – woodcuts, and screens - the city seems to be the loveliest place to live.*" Hokusai and Hiroshige, two famous *Ukiyo-e* (pictures of the floating world) artists of the Edo period, depicted the city with its all aspects such as the famous places, the amusements, the streets, workingmen. Moreover, Mt. Fuji, the sacred mountain, towers above the cityscape in many prints as the prime landmark (Siedensticker 2011).

There was a strongly religious element in an ascent of Mt. Fuji in the Edo and also early Meiji periods (Seidensticker 2011: 143). It was the custom in the Edo period to build a hill representing Mt. Fuji in temple gardens. As every *edokko* (child of Edo; Tokyoites) could not climb to the top of the mountain, it amused them to climb the garden hills (Nouët 1990: 167). Also, there were many streets with names of slopes because of topographical characteristic. The sea (Edo Bay) or Mt. Fuji could be seen from the top of these slopes which were called *Shio-mi-zaka (*Sea view slope) or *Fuji-mi-zaka* (Fuji view slope) (Akasaka 2005).

In the 18th and early 19th centuries, Edo was probably the largest city in the world with a population of over a million people (Seidensticker 2011: 32). In his book named *Just Enough,* Brown (2013) fascinatingly illustrates Edo as a model for a sustainable city as it met the conditions of sustainable design such as recognition the interaction of design with the environment, sustainable city planning, sustainable transportation, sustainable use of energy and materials. Therefore, it would not be out of place to state that the city sustained its dwellers over two hundred years until the end of the period.

As stated before, Japan was isolated from the world during the Edo period. The aim of this seclusion policy was to avoid any foreign involvement that might lead to a disturbance of internal peace. Furthermore, no Japanese was allowed to leave Japan (Dunn 2008: 7). However, by the last years of the Edo period, which may also be called as the late Tokugawa shōgunate, became the scene for severe poverty of many samurais, the heavy taxation on the peasanty, on the other hand, the increasing wealth of the merchant class. The isolation policy and technological stagnation produced internal stresses that played their part in bringing down the structure of feudal regime when it was jolted by the external shock of renewed contact with the West in the form of American "Black Ships" commanded by Commodore Perry in 1853 and 1854. The force from the Commodore Perry to open the country caused the collapse of the Tokugawa's social, political and economic structure (Sorensen 2002: 47).

The collapse of the feudal regime led to the Meiji period (1868 – 1912). Edo was chosen as the capital city for the new government, and the name of the city was changed to Tokyo; the "Eastern Capital." This situation was welcome to all those for whom Mt. Fuji was a familiar shape (Nouët 1990: 200-1).

The Meiji restoration brought enormous changes to all aspects of Japanese society by the opening of the country to the West. According to Sorensen (2002: 44), the story of the development of modern city planning in Japan begins in this period as state interventions in processes of urban development were prompted by the changing demands on urban areas arising from modernization and industrialization. Therefore, starting with the Meiji restoration, the immediate influence of Western culture dramatically changed urban landscapes, particularly the capital city Tokyo.

As the 19th century drew to a close, however, Tokyo was still a city of small wooden houses and temples that followed traditional Japanese urban patterns (Perez 2014). Moreover, pictures taken from the roof of the City Hall in the last years of the Meiji period show astonishing expanses of open land, where once the mansions of the military aristocracy had stood. Photographs from the Nikolai Cathedral in Kanda, taken upwards of a decade earlier, show almost unbroken expanses of low wooden building all the way to the horizon (Seidensticker 2011: 60).

In 1923, almost three-quarters of the city was damaged or destroyed by the Great Kanto earthquake; two-thirds of the buildings destroyed were actually consumed by the fires that burned for three days after the quake (Perez 2014). The reconstruction of the city took seven years, and it was completed by 1930. However, the city did not have long to enjoy its new self (Seidensticker 2011: 307-8). The second wave of destruction devastated Tokyo in 1945 by American air raids during the Second World War, leaving its center almost entirely flat with only a few scattered buildings standing. After the economic recovery, the first genuinely tall structure, Tokyo Tower (332.5 m), was built in 1958, and this was just the starting point of what the city has become today (Perez 2014). Being the world's tallest freestanding structure at the time, the Tokyo Tower became a symbol of the post-war recovery, representing a renewed Japan (Mandujano-Salazar 2016).

Considering the history of vertical growth in Tokyo, this phenomenon is a relatively new one in Japan compared to American cities. The most significant reason for that was the regulations about earthquake resistance and urban safety. After technological developments, the regulations were eased, and the construction of high-rise buildings was allowed in certain districts starting in the 1960s, and high-rise buildings were introduced in the city slowly, starting in the early 1970s. Due to an economic bubble, high-rise construction dramatically accelerated, and more than 89% of high-rise buildings in the city were built after 1991despite minimal planning strategies. At the beginning of the 21^{st} century, the Urban Regeneration Act further eased regulations concerning Floor Area Ratio, thereby initiating a radical transformation process that led to the city's current state. As a result, high-rise buildings were retrofitted into the existing urban fabric, which caused a chaotic morphology (Perez 2014).

Tokyo today still continues to grow skywards with numerous high-rise buildings under construction. The cityscape shaped by high-rise buildings has been criticized by several authors and scholars. For example, Daniell (2008) stated that "*the visual disorder of the contemporary cityscape is a reflection of Japan's capacity to absorb constant small-scale reorganization and the near impossibility of large-scale restructuring*." Perez (2014) supports this situation by stating "*Tokyo was never conceived as a high-rise city, and no real strategies were put in place to plan for the city's unexpected and rapid growth skywards.*" Momoyo et al. (2010) describe that Tokyo consists of "*…shameless spatial compositions and functional combinations…*" *and they argue that "da-me architecture" (no-good architecture) is really part of Tokyo's essence*." Hence, the growth of high-rise construction in Tokyo is not a result of planning or response to architectural theories, instead due to complex social, legal, economic, and political conditions (Perez 2014).

2.3. High-rise Buildings and Their Effects

Before the vertical growth phenomena, the image of cities was eminently different from the ones of the contemporary. Urban landscapes used to be mostly flat with buildings in human-scape apart from some temples, castles, cathedral or towers. With the development of high-rise buildings with varied reasons and motivations behind their construction, the image and identity of cities in many parts of the world have shifted radically affecting many aspects of urban life. The cityscape in the major cities all around the world has transformed into skyscape with the trend of vertical architecture. Before proceeding to the effects that the high-rise buildings cause on the urban forms and city dwellers, it would be necessary to explain some of the reasons for their emergence and having been widely employed.

As it is known, with the Industrial Revolution, the bourgeois class was born, and mass urbanization emerged which caused great immigration from the rural to the urban areas to find new opportunities to live. Initially, three or higher story buildings began to take place as a solution for housing problems, especially for the working class, in the cities. Subsequently, in the race of industrialization among countries, steel frames began to be used as a building material enabling the construction of taller structures. Another major development which led to high-rise buildings was the invention of the safety elevator. As Porteous (1996: 6) notes, "*before the elevator, of course, it was the urban poor who had to trudge upstairs to tiny garrets while the rich enjoyed all the advantages of spacious apartments at ground level*."

Chicago and subsequently New York were the birthplaces of high-rise buildings beginning at the end of the 19th and early 20th centuries (Ali 2010). After Chicago was destroyed by the Great Chicago Fire in 1871, the city had to be rebuilt from the ashes. Combined with increased urban land prices, the development of steel and the invention of the elevator, the disaster gave rise to the development of the high-rise buildings, and it is widely accepted that the first high-rise building made of steel frame was constructed in Chicago in 1885 (IREM 1985).

High-rise buildings, being an American phenomenon for nearly eight decades from their birth, symbolized energy, enthusiasm, and optimism that characterized the United States in the late 19th and early 20th centuries (Barr 2013). Starting with the first high-rise buildings in American cities, these giant-scale steel and glass artifacts have become to be the symbols of industrialism, capitalism, modernism, and globalization in time. By the effect of globalization, rapid economic development, and growing population in urban spaces, high-rise buildings became to be widely employed in other parts of the world too, and today these buildings can be found in every major city throughout the world (Ali 2010; Ali and Armstrong 2012). Denser and taller buildings to meet the needs of cities have settled down in metropolitan areas through various renewal and redevelopment projects and high-rise buildings have started to define the skyline by reshaping scenic sights and aesthetical beauty of the cities (Yu et al. 2010).

Like other human-made artifacts, high-rise buildings have both advantages and disadvantages obtained from their construction in urban environments (Rahnama et al. 2014). Keeping in mind that the intense vertical movement of buildings is a response to the population growth in the cities, the development of urban centers, and rapidly decreasing land (Zahiri et al. 2016), the circumstances that most of the major cities have been facing make the construction of high-rise buildings to achieve compressed cities as a must. Therefore, as the advocates of high-rise buildings would emphasize, denying the benefits of the vertical growth would be an unrealistic approach and far from an objective perspective. High-rise buildings, indeed, meet the housing and working needs of a considerable amount of people and provide a safe environment in the cities (only if they are well-planned). Furthermore, they provide economical use of land by supplying accommodation for more people in a narrower area which in turn reduce the cost of transportation. As Ali (2010) states, high-rise developments as a land-use strategy, maximize building area with a minimum physical footprint which in turn public space, agricultural lands, and wilderness remain untouched. Moreover, although the literature on the study shows that the presence of green areas has a restorative influence on humans, dense vegetation loosens the spatial control and reduces the productivity of workers (Hernandez and Hidalgo 2005). In other words, high-rise buildings provide advantages for productivity as they facilitate the organization in the urban space.

On the other hand, if we leave aside merely pragmatic approaches towards the environments that we live and encounter every day, it is an incontrovertible fact that high-rise buildings have great negative impacts such as on wind flow (Cionco and Ellefsen 1998; Kubota et al. 2008), sunlight distribution (Oke 1988; Robinson 2006; Swaid 1993), the urban microclimate (Adolphe 2001) (cited in Yu et al. 2010). Since the well-being of humans is related to the environments that they live, it is no surprise that several studies have emphasized the detrimental effect of high-rise buildings on human health. For instance, recent research (Owen 2016) has revealed that people who live on the third floor or above are less likely to live after suffering cardiac arrest. Also, a significant difference was found regarding blood pressure and heart rhythm of people who live on the lower floors and higher floors (Rohde and Aamodt 2016; Lin et al. 2011).

Apart from the physiological effects of high-rise buildings on their opponents, Rahnama et al. (2014) state that high-rise buildings cause disadvantages for living in cities through trampling on the values and traditions. Indeed, because the plans of these ultra-modern developments are highly strict, many dwellers are not able to find free spaces to meet their own needs in these structures, and this situation results in loose place-attachment and low life quality. In a review of the empirical studies done by considering the high-rise building dwellers' quality of life, Gifford (2007) suggests that high-rise buildings are less satisfactory than other housing forms for most people, "*that they are not optimal for children, that social relations are more* *impersonal and helping behavior is less than in other housing forms, that crime and fear of crime are greater, and that they may independently account for some suicides*".

Apart from the studies examined the effects of living in high-rise buildings on their residents, only a few studies (Stamps 1991; Stamps 2002; Keshtkaran et al. 2017; Asgarzadeh et al. 2012; Asgarzadeh et al. 2014) considered the satisfaction level or preferences of non-residents. However, it is an essential fact as more people have to look at those buildings than to live in (Gifford 2007). Regarding the issue, in their research that was conducted in Tokyo, Asgarzadeh et al. (2012) and Asgarzadeh et al. (2014) proved that high-rise buildings cause a sense of oppression for the observer. Furthermore, it has been proven that the oppressiveness perception is higher when a person is looking up and facing perpendicular to the building façade compared to the position of a person who is looking down or straight ahead (Hwang et al. 2007; Asgarzadeh et al. 2012).

The visible landscape is believed to affect human beings in many ways, including aesthetic appreciation and well-being (Velarde et al. 2007). Due to their morphology, daring heights, and density, the impact of high-rise buildings also leads to the destruction of urban forms such as affecting or changing the place identity, obscuring pleasant views or threatening antiquity of heritage sites which are the factors that would affect the well-being of city dwellers in turn. Such effects caused by high-rise buildings that are related to the problem of the present study will be discussed as follows.

2.3.1. Place identity and high-rise buildings

From the beginning of their settlements in the cities, high-rise buildings have been the focal point of various criticisms about their effect on the aesthetics of cities, and about the symbolic meanings that they represent. Parker (2015) states that high-rise buildings show capitalism at its worst and are often understood as a representative of damaged modernity that destroys authentic human and communities. Frank Lloyd Wright was one of the opponents of the vertical growth phenomena by stating "*false, cruel ambition [which] is painting haphazard, jagged, pretentious, …"* (Marquesse1988: 165). On the other hand, Le Corbusier supported capitalist modernism in a way by stating "*…an image of incredible brutality and savagery. Here is certainly the most prominent manifestation of the power of modern times. This brutality and this savagery do not displease me. It is thus that great enterprises begin, by strength"* (Marquesse 1988: 16) (in Parker 2015). Indeed, regardless of their location or functional purpose, the prestige factor that is embodied in their symbolism has represented how a nation and its economy is vigorous, modern and advanced. Furthermore, countries are in an unreasonable race to earn the world's tallest building which would represent the power of their cities.

In this regard, by transforming the panoramic view of the urban skyline, with their density, character, and heights, high-rise buildings have the power of shaping the identity of cities (Ali and Armstrong 2012). However, the new identities which are shaped by high-rise buildings often result in stereotypical boxes detached from the reality of the place. The trends in architecture such as the International Style -that is directly connected with modernism movement- spread from its North American roots to encompass the entire world. With the purpose of establishing a global identity, non-Western countries have borrowed the Western, more particularly North American style buildings with little or no modification. This situation resulted in 'Manhattanization' of the urban landscapes, symbolizing the American cultural hegemony all over the world. As a result, having lost the regional cultural heritage, almost any global city around the world happened to resemble each other (Zahiri et al. 2016).

Looking at the urban landscapes of Japan, Kinoshita (2012: 18-21) bemoans the lack of individuality or identity of the places which are too similar to each other due to redevelopment projects and argues that the images of the places are indistinguishable from each other which makes it impossible to tell where the given place is. Redevelopment projects including high-rise developments in which the economic development is the primary factor take the concept of "*scrap and build*" without any consideration of preserving the historical context of a place (Kinoshita 2012: 18-21).

The contemporary situation of global cities in the world seems to be in contrast with the definition of place identity that Lynch (1981) clearly stated as "*the extent to which a person can recognize or recall a place as being distinct from other places*." The spread of high-rise buildings as a universal design template is, indeed, one of the factors that foster homogeneity and lack of individuality or authenticity in the urban landscape. Concerning Alan Jacobs and Donald Appleyard's (2007: 102) words: "*cities are becoming meaningless places beyond their citizens' grasp. We no longer know the origins of the world around us… It is an alien world for most people.*" From this point of view, the meaningless and indistinctive images of urban landscapes that have been created by high-rise developments point out to the term 'placelessness.'

Coined by Edward Relph, the term placelessness has influenced several research and ideas about the issues on place especially under the effect of globalization. Relph (1976: 90) describes placelessness as "*an inauthentic attitude towards places is transmitted through a number of processes, or perhaps more accurately 'media', which directly or indirectly encourage 'placelessness', that is, a weakening of the identity of places to the point where they not only look alike but feel alike and offer the same bland possibilities for experience. These media include mass communication, mass culture, big business, powerful central authority, and the economic system which embraces all these*." In this sense, being the products of mainly economic systems, which is shaped by global capitalism, the contemporary high-rise cities created by inauthentic approaches may result in a lack of identity or 'placelessness.' On the other hand, these new images of landscapes may be perceived as a reinterpretation of the meaning of place.

According to Lynch (1960), the image of a place has three components: identity, structure, and meaning. The meaning component here stands for the individuals' own psychological and social processes that provide perception (Stokols and Shumaker1981; Stedman 2002; Shao 2014). Hence, the meaning assigned to place identity varies from person to person (Kinoshita 2007: 31). In other words, there is an interrelation between place identity and human experience and with Ian Nairn (1965: 78)'s words "*there are as many identities of place as there are people.*" Identity is in the experience, eye, mind, and intention of the beholder as much as in the physical appearance of the city or landscape (Relph 1976: 45).

Place identity can be perceived differently by different individuals according to their socio-cultural backgrounds. Therefore, the meaning of cities reshaped by high-rise buildings may be experienced and interpreted diversely by the beholders. However, whether this derived meaning from a place or the perceived place identity would be different from any other place in the world is dubious. As Huriot (2012) asks "*Does establishing an identity mean doing the same as everyone else?*" and warns "*beware of urban cloning*."

2.3.2. The effect of high-rise buildings on historic urban landscapes

As discussed above, due to post-war modernist planning attributes and globalism, the identity of cities all around the world have started to be indistinctive. However, although the phenomena of capitalist modernism have caused especially the mega-cities like Tokyo to become similar to each other, it is still possible to trace the unique identities of those by investigating their cultural heritage.

Urban identity is a blend of physical heritage, local culture, and geographical context overlaid with perceived memories (Boussaa 2017). Hence, the identity of a place is also viewed in relation to the historical heritage and the characteristics of the region (Deffner and Metaxas

2007; Shao 2014). In this sense, heritage sites, such as historical gardens, or urban views such as vistas or panoramas within and from a city are unique elements of a region which create and enhance the identity of a place. Furthermore, Tweed and Southerland (2007) state that such heritage sites have a role of improving the well-being of people as well as satisfying their needs for identity and sense of belonging or attachment. Therefore, their proper preservation and continuity are considered to be essential as they are the footprints of collective memories and the elements of the authenticity of a place.

However, as the cities have grown denser and taller rapidly, high-rise buildings often blocked the unique urban vistas and also disturbed the views of historical heritage sites by spoiling the integrity. Therefore, as Asgarzadeh et al. (2012) states, the urban environment which has a significant number of high-rise buildings leads to the destruction of the pleasant urban forms along with the negative visual impact on city dwellers.

After realizing the impact of high-rise buildings, restrictions regarding the height of buildings in specific areas have started to be applied in urban planning strategies of many countries. Initially, Chicago and New York were the cities where story limitation was applied (Weiss 1992). Subsequently, Washington DC, Boston, and Beijing administrated building height restrictions due to aesthetic matters (Yu et al. 2010). Also, Europen cities such as London and Paris implemented height limitations for the purpose of preserving historic urban landscapes (Zhuowa 2006; Su and Nie 2007) (cited in Lin et al. 2017). Also, Canadian cities, Denver, Montreal and Vancouver, severely restrict building heights in selected locations to protect views to the mountains. In these cases, there was an attempt to preserve a view corridor free of buildings from the significant vantage points (Zacharias 1999).

In Japan, also, some regulations have been applied to protect scenic zones (*fuchi-chiku*) in urban areas. For instance, Okayama City regulated that the building height must not be taller than 13 m within a 100 m distance from Korakuen Garden. Likewise, in Kurashiki city

(Okayama prefecture), there is no permission to construct tall buildings which can be seen from the historical quarter of the city (Arifin 1998). Also, Kyoto city established a Vistaed View Creation Ordinance in 2007 to conserve magnificent vistaed views and borrowed landscapes by controlling building height and design regulations (KCLP 2007). Prior to this, there were also other approaches for the preservation of historic landscapes such as the Law of Preservation of Ancient Cities which was enacted in 1966. However, this law applied only to ancient cities such as Nara, Kyoto, Kamakura (Akasaka 2014). On the other hand, many local views have been obscured and the sceneries of heritage sites have been jumbled by the rise of high-rise buildings in Tokyo.

2.3.2.1. Obscuration of views in Tokyo

Brown (2013: 120) describes Edo (later Tokyo) as a "city of views" which is a result of a deep interconnectedness between nature and culture. The city was organized with a strong centrifugal logic in relation to its natural surroundings and topography, and it was carefully integrated into its local environment. Mt. Fuji and Mt. Tsukuba, for instance, looming far in the distance, maintained a strong presence in the city dweller's consciousness and as repositories of symbolic meaning (Jinnai 1995: 41-42). One of the most popular urban-space design models in this period was *Yama-ate*, meaning to direct a street axis toward a particular mountain (Yoh 1992). From the beginning, the planners considered both the nearby hills and distant landscape when laying out the major streets and many streets of Edo were aligned to provide urban vistas of Mt. Fuji to the west, Mt. Tsukuba to the north, and scenic hills and river views around town (Brown 2013: 120). Furthermore, several small hills within the city, such as Atago-yama, Zojoji Temple, Yushima-dai, and Kanda-yama were identified as landmarks to determine axes for road layout in the center of the city (Okamura 2018). These outstanding and unique natural views, being both pleasurable elements for the dwellers and also serving as visual orientation elements, indeed, correspond to the term 'landmark' that is described by Lynch (1960) as *“readily identifiable objects which serve as external reference points.”*

However, many views have been obscured in central Tokyo where building space has become increasingly dense (Okamura 2018). This obstruction due to the erection of high-rise buildings has occurred dramatically in the case of Fuji-mi slopes (*Fuji-mi-zaka*). There used to be 16 Fuji-mi slopes in Tokyo which were the viewpoints from where one could command to Mt. Fuji as a distant view. These spots were also called “*Youhai-jo*” which means “viewing and praying” (Akasaka 2005), as Mt. Fuji has been an important landmark as a sacred mountain for the dwellers. Today, however, no spot on the land has left to view Mt. Fuji (Akasaka 2014) apart from the Fuji-mi-zaka in Nippori (Arakawa Ward). Furthermore, there is no Shio-mi-zaka (Sea view slope) anymore to view the Tokyo Bay. Even in the case of the Nippori’s Fuji-mi slope, half of the shape of Mt. Fuji has been concealed by the construction of a 13-floor condominium despite a protest movement by the citizens (Akasaka 2005). As a result, such views within and from the city which provided a unique identity for the city and increased the spatial experience of its dwellers got lost due to the erection of high-rise buildings. This situation may be a subject of debate considering the loss of character or a decline in visual amenity in the city.

2.3.2.2. The effect of high-rise buildings on heritage gardens

The heritage gardens in Japan are protected under the legislation of the National Cultural Properties Protection Act (*Bunka-zai Hogo-ho*), and some of them were declared *meisho* (outstanding beauty) or *tokubetsu meisho* (special outstanding beauty area). The Act covers regulations requiring the management and maintenance of the garden elements to be as close as possible to the original design and material (Arifin 1998). Therefore, the heritage gardens are preserved respectfully to their original design and are maintained well. However, since the Act does not cover the areas which are out of garden boundaries, the spatial context of the gardens, in other words, the relationship between the gardens and their surroundings seems to be ignored. However, the spatial context of the heritage gardens is an essential aspect in terms of landscape aesthetics, and it creates a distinct effect on landscape perception. Therefore, as Shinobe (2012) states, regarding traditional gardens in the cities, in order to maintain the landscape aesthetics, proper protection of the external landscape is as important as the protection of the inner landscape of the gardens.

The location of the daimyo gardens in Tokyo is unusual for especially European countries, as such residences and gardens would only have been built as country villas or part of modern suburbs. However, these gardens in Tokyo appeared widely in the urban center which is one reason that Edo has been called a grand garden city (Jinnai 1995). The land-prices on these areas skyrocketed in the time of rapid economic development subsequent to the Second World War. As a result of land-use changes and several redevelopment projects, high-rise buildings with the purpose of making the most of the valuable land have settled down adjacent to the heritage gardens.

From the perspective of cultural heritage conservation, these traditional gardens have been artificially disturbed by the development in their settings, and their skylines have been drastically changed. The most glaring examples can be given from the gardens namely Koishikawa Korakuen and Hama-rikyu Gardens where Tokyo Dome and Shiodome redevelopment project profoundly affected the gardens' sceneries respectively (Okamura 2018).

In their study, Shinji et al. (1989) searched the effect of high-rise buildings on the historical gardens of Tokyo (Hama-rikyu, Kyu-shiba-rikyu, Rikugien, Koishikawa Korakuen, and Mukojima Hyakken) which are designated as national properties. They indicated that modern buildings create a great contrast with the heritage gardens and cause fatal landscape destruction by their size, scale, form, material, color, and usage. By applying distance and height analysis, they revealed that the buildings caused a sense of oppression and the landscape quality of the heritage gardens was significantly reduced due to the intrusion of the buildings. Furthermore, by using an eye-mark recorder, they found that a considerable amount of gaze points was gathered on the buildings rather than the garden elements. In this context, it is understood that the focus of the garden is greatly affected and moved to the surrounding buildings. They explained that among all the gardens, the effect of the buildings on Hama-rikyu and Kyu-shiba-rikyu gardens were the biggest.

Another study conducted in one of the gardens in Tokyo (Hama-rikyu Gardens) was done by Koizumi and Ishikawa (2007). In their study which was mainly the analysis of the visibility of the garden elements in a sequence, the authors also analyzed the effect of surrounding buildings. View-shed analysis conducted to the views taken from the artificial hills (Mt. Hakkei, Mt. Fujimi and Mt. Ochin) and one of the tea houses (Nakajima teahouse) in the garden showed that Mt. Hakkei and Nakajima teahouse were affected by the revitalization project of Kachidoki district while Mt. Fujimi and Mt.Ochin were affected by Shiodome district. However, they emphasized that the landscape of the garden is affected by the buildings from almost all viewpoints other than the examples mentioned.

Arifin and Masuda (1997) conducted their study in one of the provincial daimyo gardens namely Ritsurin Garden located in Takamatsu City, Kagawa Prefecture in Shikoku Island. They identified the intrusion of the external buildings as an effect which visually destructs the garden scenery and degrades the true essence of the garden. To solve the problems caused by the buildings, they created alternative solutions from both inside and outside the garden. From inside the garden, they proposed planting trees on the available areas to hide the building views or to mitigate the conspicuousness of the buildings. However, since the action inside the garden is limited regarding the protection of the original design of the garden, they suggested another action to be carried out in the surroundings of the garden. In this sense, they proposed that the land-use in the surrounding area should be revised to provide a suitable protection area for the garden. Based on the studies of Ashihara and Okazaki (Takahashi 1982), and also the legislation applied in France to protect historical sites, they suggested a 500 m buffer zone around the garden. They divided this area into three concentric zones, i.e., 0-175 m, 175-350 m, 350-500 m from the garden wherein the maximum building height in each zone was proposed to be 20 m, 30 m, 40 m respectively so that the buildings would not be visible from inside the garden.

Arifin and Masuda (1998) evaluated the visitors' opinion on the scenery of Ritsurin Garden and evaluated their awareness of the visibility of external buildings to encourage the implementation of conservation action which they had already proposed in their previous study (Arifin and Masuda 1997). Their questionnaire consisted of four parts. 1. visitor's background, 2. judgment on the garden scenery as a whole, 3. the conspicuousness and the extent of visual detraction of the external buildings, 4. preference for visual conservation action. Their results indicated that judgments on the conspicuousness of external buildings highly correlated with the extent of visual detraction. Most of the visitors (68.8 %) supported conservation actions to conserve the visual quality of Ritsurin Garden.

Subsequent to the aforementioned studies, Arifin (1998) conducted another experiment to investigate preferences for the garden scenery modifications. Three simulations for each scene were created by Photoshop software in which 1) Building images were omitted; 2) Building views were reduced with planting image; 3) More buildings were added; 4) Existing view (as a control). The slides of the simulated images were shown in a classroom to 67 undergraduate students in the major of landscape architecture. As a result, most respondents displayed their first preference for the unspoiled views. The second preference was the views screened by planting. The third was the existing views, and the last preference was the views with many buildings.

Another study for the provincial daimyo gardens namely Suizenji Jojuen (in Kumamato City) was conducted by Lin et al. (2017). They built a 3D model by using GIS, computed the degree of visual impact of visible buildings by an angle of elevation analysis and provided a quantitative method of the building height restriction. As a result, they found that a large proportion of the visible buildings had 5° angle of elevation which caused a person to produce a sense of obstacle (according to Shinji et al. (1989)). Also, there were buildings with an angle of elevation of higher than 11° which makes the observer produce a sense of oppressiveness. To solve the problem caused by the buildings, they proposed 800 m buffer zone around east of the garden and 400 m buffer zone around the northwest of the garden.

As can be seen in the examples above, the previous studies regarding the issue have demonstrated the negative impact of high-rise buildings on Japanese gardens. They explained the existence of visible buildings as an element that destroys the original spirit of the garden and emphasized the urgent need for control to reduce this negative effect. However, most of these studies above addressed the issue form an objective approach while the studies gauging visitors' perception and preferences are limited.

Although aesthetics seems to be a matter of taste varying from person to person, many studies pointed to the presence of commonalities in aesthetic preference and showed that aesthetics could be quantified (Nasar 1989). Therefore, environmental aesthetics and sociological studies in parallel may provide scientific results which are shaped by the participation of stakeholders which in turn meets the needs of today's democratic societies. As a start point, visual landscape perception and landscape preference of people should be questioned to see if there is a demand for conservation actions or any given issue in urban planning and design.

2.4. Landscape Perception and Environmental Aesthetics

Humans are socio-cultural creatures as the taxonomic name ‘homo sapiens’ means ‘wise man’ who is able to think with the cognitive abilities (Harari 2014). Despite their limited physical capacity compared to other animals, humans could survive in the wilderness and sustain their species for centuries thanks to their cognitive abilities. By their capacity to organize a community along with the ability to design and build tools or artifacts, humans built a shared cultural environment and shaped their physical environments based on their needs. With the agricultural revolution, humans became to be able to produce their food by breeding of animals and plants which strengthened the community bonds. With the Industrial Revolution, on the other hand, urbanization phenomenon emerged that has drastically changed many aspects of life.

The technological developments which flourished after the Industrial Revolution may have eased modern human’s life. However, on the other hand, these developments along with the urbanization phenomenon indispensably have destabilized the balance between human and nature. Today, humans can hardly find aesthetic pleasure in many urban areas of the world if the connection with nature is cut off. Human, indeed, always needs to experience nature in her/his daily routine. In metropolitan areas where an immediate nature is hard to find, citizens usually grow plants at their home mostly without an expectation of having food from them, and they keep a pet at their home which all help to rescue the modern human from the feeling of being detached from nature (Gullone 2000). Since the natural-perceived green spaces have been decreasing in urban areas, people, if they have the opportunity, mostly prefer to spend their leisure time out of the cities where they can find an attachment with nature free from the crowdedness and tiring atmosphere of the cities.

These are the indicators of the importance of the green areas and natural landscapes in human life observed by the naked eye, and many examples can diversify these. Moreover, previous studies have shown that being in contact with nature helps to avoid stress which is caused by urban life and to improve human well-being both in mental and physical ways (Razak et al. 2016; Thani et al. 2016; Kaplan and Kaplan 1989). Also, there are consisting research findings which indicate that natural environments are preferred over built environments (Kaplan and Kaplan 1989), and the existence of green spaces like parks and gardens in urban areas has great importance for city inhabitants as these spaces have a restorative effect on humans (Kaplan et al. 1998). Ulrich (1993) emphasizes the importance of landscapes regarding human well-being. However, as the previous studies revealed, only some particular landscapes which are perceived as natural and are aesthetically pleasing can sustain this outcome. Therefore, to gain a better understanding of the relationship among human, nature, and culture, the term perception should be investigated.

2.4.1. Landscape perception

Landscape is a term that has been questioned by various researchers (Stilgoe 2015; Doherty and Waldheim 2015) and has been a subject for various disciplines from natural science to social science (Kaymaz 2002). Therefore, the definition of landscape varies according to the discipline in which the term is subject to (Bell 1999). Herrington (2009) emphasizes that "*…(Landscapes) are not only created physically, but they can also be made through perception*." Indeed, the interaction between human and environment gives the landscape term another dimension in addition to its physical features. The perception which is shaped by socio-cultural experiences of an individual is strongly effective on how a landscape is assessed. The European Landscape Convention also emphasizes the importance of perception on landscapes by the statement of "*…an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*" (Council of Europe 2000). Therefore, human perception has become an area of concern for landscape studies especially for those regarding research topics such as visual aesthetic quality assessment, landscape preferences, and environmental behavior. These studies have indicated that optimum use/ sustain capacity of a landscape may only be achieved by investigating user perceptions (Palmer 1997; Nielsen et al. 2012; Kalivoda et al. 2014; Kienast et al. 2015; López-Martinez 2017). Furthermore, various theory and hypotheses have been established in the discipline of environmental aesthetics to explain the factors of landscape perception and landscape preferences and to provide a basis for visual landscape quality assessment.

According to Lothian (1999), there are two different approaches to landscape quality assessment: the objectivist approach and the subjectivist approach. Rooted by Plato's view on aesthetics, the objectivist approach suggests that visual quality is inherent to the physical features of a landscape which can be calculated by quantitative methods. The subjectivist approach, on the other hand, has rooted by Kant's view on aesthetics and suggests that the visual quality of a landscape is considered a construct of the observer (Lothian 1999). This distinction falls in line with the enduring discussion in the study of aesthetics in relation with the philosophy that is whether beauty is 'inherent to the object' or 'in the eyes of the beholder' (Meinig 1979; Lothian 1999; Tveit et al. 2012). The objectivist approach has ruled over the practice of landscape aesthetics in that quality of visual landscape is evaluated by experts who have formal knowledge about landscape and this knowledge is mainly based on quantitative data. On the other hand, the subjectivist approach has become a judge of the research on quality of visual landscape that is obtained from layperson's perceptions and preferences (Ohta 2001; Thwaites and Simkins 2007; Tveit et al. 2012).

The subjectivist approach is more complicated as it involves the interpretation of one's perception and emotional judgments based on their background and associated experiences (Lothian 1999; Pouyaa and Behbahania 2017). However, it provides more promising results for understanding the aesthetics of environment (Lothian 1999; Daniel 2001). Moreover, it empowers the community to be part of the assessment and decision-making process for the future of any given environment (Rosley et al. 2011).

Nasar (1987) states that "*perceived visual quality is a psychological construct: it involves subjective assessments. Such assessments have primary reference to either the environment or to people's feelings about the environment*." Therefore, the factors of the perception have been investigated by environmental psychology and environmental aesthetics disciplines. To understand people's visual landscape preferences which are derived from their perception and cognition, various theories have been constructed. In the following section, environmental aesthetics and theories are discussed.

2.4.2. Environmental aesthetics

The term aesthetics has a long history as various philosophers have discussed it and formalized its related concepts. Since classical Greece, the question of 'what is beauty?' has been at the center of aesthetic theory (Porteous 1996: 19). According to the general accounts, the term aesthetic was first used as a branch of philosophy by the German philosopher Alexander Baumgarten, in his book Aesthetica Vol2. (1750-1758). Etymologically, the very word aesthetic is derived from the Greek word '*aisthanesthai'* that means 'to perceive, to feel or sense' (Webster Dictionary). Therefore, even though the term aesthetics seems to be related merely to the 'beauty' in things, the very meaning of the term explains its perceptive sensory roots.

Philosopher Ludwig Wittgenstein, who is one of the frontiers of analytic aesthetics, states that "*...You might think Aesthetics is a science telling us what's beautiful-almost too ridiculous for words. I suppose it ought to include also what sort of coffee tastes well..."* (Wittgenstein 1967:11). The aesthetics, therefore, cannot be determined by estimations and investigations on solely the concept of beauty; rather it is a science of knowledge derived from senses and affective appraisals of humans. Relatedly, Carlson (2000: xii) defines the aesthetics as "*… the area of the philosophy that concerns one's appreciation of things as they affect one's senses, and especially as they affect them in a pleasing way*."

After it was coined by Baumgarten as a branch of philosophy, the aesthetics tended to be associated mainly with fine arts. Environmental aesthetics, on the other hand, recorded the most critical stages in the 20th century. However, environmental aesthetics was born in the 18th century when 'appreciation of nature' started to be discussed and interpreted by the philosophers like Edmund Burke and Immanuel Kant. The advancements made in this century regarding taking nature as a priority in the philosophy of aesthetics and aesthetic experience continue to play an important role in contemporary environmental aesthetics. The main concepts of this century's environmental aesthetics were 'beautiful, sublime and picturesque' by the context of 'disinterestedness' (Carlson 2009). Being an instrument for appreciating nature, disinterestedness was described by various philosophers, but its classical and best-known formula was given by Immanuel Kant. In his book "Critique of Judgement," Kant (1790; 2009) explains disinterestedness as:

"*Superiority which natural beauty has over that of art…. If a man with taste enough to judge works of fine art with the greatest correctness and refinement readily quits the room in which he meets with those beauties... and betakes himself to the beautiful in nature… we will then regard his choice even with veneration, and give him credit for a beautiful soul...*"

Kant (1790; 2009)

With the emergence of disinterestedness concept, nature began to be seen as an object of aesthetic experience (Carlson 2000). Daniels (2008) explains disinterestedness as "…*a genuine aesthetic judgment (which) does not include any extrinsic considerations toward the object of the judgment itself, such as political or utilitarian concerns*." Therefore, it refers to a particular state of mind which is as 'vacant and unemployed' (Carlson 2009, Carlson and Lintott 2008) and it can be experienced through the experience of 'being away' as it is described in restorative environment studies (Kaplan et al. 1998). However, such a mental state is hard to achieve in today's urban spaces as the city dwellers are surrounded by various information which forces their mental processing power.

Council of Environmental Quality (1970) notes that "*Visual quality, like clean air and fertile soils, is one of the nation's natural resources*." (Ridout 1988). Starting especially from the second half of the 20th century, people all around the world have become to a level of consciousness about the natural degradation and ecological problems in their environments. Even though industrial and technological developments offered people a more comfortable life, the built environment detached from natural amenities caused dissatisfaction and some psychological and sociological problems in the developed countries. To enhance a good quality day-to-day environment for the people who especially live in urban areas, environmental science disciplines started to seek to find ways to improve the visual quality of the everyday environments (Zube 1974). Therefore, theories and hypotheses have been constructed and empirical studies, related to the theories, have been conducted in environmental aesthetics discipline to explain the underlying reasons for people's landscape preferences and perceptions.

2.4.2.1. Environmental aesthetics theories

The theories in environmental aesthetics to explain the landscape preferences of humans can be divided into two categories as evolutionary (or biological) theories and cultural theories (Bourassa 1988). Both evolutionary and cultural theories show a universality regarding landscape preferences. Besides, recent research (Strumse 1996; Tveit 2009; Van den Berg et al. 1998; Yu 1995) reveals that cultural influences and personal experiences are effective on landscape preferences and these factors modify and shape the evolutionary-based preferences

(Tveit et al. 2012). Therefore, it is essential to investigate the reasons for specific landscape preferences in both evolutionary and cultural contexts. The theories in both categories will be discussed respectively.

2.4.2.1.1. Evolutionary theories

Evolutionary theories explain landscape preferences as a result of human evolution. These theories suggest that today's landscape preferences are innate reflections of landscape qualities enhancing survival in early humans (Tveit et al. 2012). Orians and Heerwagen (1992: 557) explain biological substructure of evolutionary theories as "*natural selection should have favored individuals who were motivated to explore and settle in environments likely to afford the necessities of life but to avoid environments with poorer resources or posing higher risks*." In this sense, evolutionary theories argue that early humans' survival in the wilderness for an extended period has affected several genetic modifications of people all around the world and has left traces on modern humans' landscape preferences. The empirical research regarding evolutionary theories, as a matter of fact, proves that there is a high degree of universality in landscape preferences (Bell 1999; Kaplan and Kaplan 1989; Ulrich 1986; Van den Berg and Koole 2006; Tveit et al. 2012).

Prospect-refuge Theory: Formulated by geographer Jay Appleton, prospect-refuge theory, as one of the evolutionary theories in the environmental aesthetics discipline, plays an essential role in understanding landscape preferences (Appleton 1975a). Prospect-refuge theory was created in a theoretical vacuum (Appleton 1975b), at a time when there was plenty of empirical research on landscape preferences, but none of this research was grounded in a strong theoretical base (Zube et al. 1982; Zube et al. 1987).

Prospect-refuge theory focused on the role of humans in prehistoric times as being both predators and prey in nature. From this perspective, Appleton (1975a) underlined the importance of "seeing without being seen" in order to hunt without being hunted and stated that natural selection has led humans to prefer settings in which they have the opportunity to see (prospect) without being seen (refuge). In this respect, landscapes should possess both refuge- and prospect- related features in balanced proportions for a satisfying aesthetic experience.

Several consistent studies have considered prospect-refuge theory as a valid explanation for human responses to the environment, and the theory has become accepted in design disciplines as a proper way to create ideal spaces for human (Kellert 2005; Lippmann 2010, Dosen and Ostwald 2016). Furthermore, it affected the formulation of other evolutionary theories such as habitat theory.

Habitat Theory: Habitat theory or widely known as Savanna hypothesis explains environmental preferences as the result of the search for a suitable and nutritious habitat for the survival and sustainability of human life (Orians 1980). According to habitat theory, humans have an innate preference for savanna-like landscapes, as the East African savanna has been regarded as the cradle of humanity and was suitable habitat for early humans (Tveit et al. 2012; Leakey 1976). According to Orians (1986), "*savannas of tropical Africa have high resource-providing potential for a large, terrestrial, omnivorous primate ... In savannas ... trees are scattered and much of the productivity is found within two meters of the ground where it is directly accessible to people and grazing and browsing animals. Biomass and production of meat is much higher in savannas than in forests."* From the functional-evolutionary point of view, Orians (1986), therefore, suggests that savanna-type environments are highly preferred by evoking strong positive emotions in their observers.

Biophilia Hypothesis: Another evolutionary based theory namely biophilia hypothesis was developed by biologist Edward O. Wilson in 1984. Based on this theory, Wilson (1984) proclaims that humans have an "*innate affinity for life and lifelike processes*." Thus, humans seek to have a link with living creatures like animals, plants, and landscapes which are the places serving mutual effect for all (Tveit et al. 2012). Wilson (1993: 32) indicates that even though modern-humans are neglected from the natural environment, their needs for the factors of biophilia hypothesis cannot be replaced by today's artifacts; "*Instead, they persist from generation to generation, atrophied and fitfully manifested in the artificial new environments into which technology has catapulted humanity*."

Affective Theory: Advocated by Roger Ulrich, affective theory considers the first unconscious reaction of humans towards the environment. According to Ulrich (1983), landscapes have a direct impact on their observers, and the physical features of the landscapes raise a variety of emotions and feelings on humans which affect their well-being.

Affective reaction can be assessed by affective appraisal, which is the evaluable emotional reaction (Nasar 1994) and one aspect of how someone interprets an environment (Russell 1988). According to the circumplex model (Russell 1980), affective appraisal contains at least two primary dimensions: pleasure and arousal (Russell and Pratt 1980). This model is considered as a fundamental theory of human emotion, stating human affection is based on the pleased-unpleased (valence of affection) and degree of-arousal (intensity of affection) dimensions (Zhang and Lin 2011). Moreover, the combination of these two orthogonal dimensions can be assumed to yield four affective states: distressing, exciting, boring, relaxing. Later studies have confirmed these two dimensions and four affective states as appropriate for assessing the affective quality of actual environments and have indicated that they apply, to a certain extent, across cultures (Motoyama and Hanyu 2014).

***Information-processing Theory*:** Introduced by Rachel Kaplan and Stephan Kaplan, information-processing theory has become one of the most influential theories to explain landscape preferences. The preference matrix (Kaplan and Kaplan 1989) developed based on the theory became probably the most well-known and referenced one among the landscape preference approaches (Tveit et al. 2012).

According to Kaplan et al. (1998), information has been central to human experience and survival throughout the evolution of humans (Kaymaz 2012). Humans have exposed various information on their daily routine, and they are consciously or unconsciously process this information and make some decisions. Kaplan and Kaplan (1989) have suggested that humans seek to make sense of the environment to be involved in it and to feel secure. Therefore, understanding of an environment has been an essential factor for landscape preference. Besides, people want to explore by seeking more information and look for new challenges (Kaplan et al. 1998; Kaymaz 2012). Therefore, understanding and exploring are considered to be the two major components in terms of supplying information about an environment which has been very important in shaping landscape preferences (Kaplan and Kaplan 1989).

Based on these two-major pattern, Kaplan and Kaplan (1989)'s preference matrix comprises four variables which are 'coherence, legibility, mystery, and complexity.' They identified four predictor variables, two of which 'coherence and legibility' help one to understand the environment and the other two of which 'complexity and mystery' encourage an environment's exploration. In the preference matrix, 'coherence' stands for an immediate understanding of how elements in the environment fit together. 'Legibility' is the understanding of what lies ahead and how one can find his/her way without getting lost. 'Complexity' refers to the visual richness in an environment that can be immediately explored. Lastly, 'mystery' is the promise of new things to explore if one moves further into the landscape (Tveit et al. 2012).

2.4.2.1.2. Cultural theories

Cultural theories in environmental aesthetics explain landscape preferences as an output of social, cultural interactions and individuals' backgrounds. Therefore, these theories suggest that landscape preferences are learned rather than being instinctive (Tveit et al. 2012).

Topophilia: Topophilia was theorized by Yi-Fu Tuan (1974) and literally means 'love of place' from its Greek origin (Webster Dictionary). Tuan (1974: 4) explains topophilia as "*the affective bond between people and place or setting*." Derived from perceptions and related to given values and attitudes towards a place, the theory emphasizes the emotional bond to a place. Familiarity and experience, therefore, are the essential indicators for landscape preferences (Tuan 1974; Tveit et al.2012). This given emotional bonding has been investigated with related concepts such as place attachment (Kyle et al. 2005; Smaldone et al.2005; Williams and Vaske 2003).

Ecological aesthetic theory: Ecological aesthetic theory indicates that ecological knowledge about a landscape is an essential indicator for landscape preferences (Carlson 2009; Gobster1999; Nassauer 1992; Tveit et al. 2012). It suggests that the intrinsic value and beauty of a landscape can be fully appreciated only if an observer has sufficient knowledge and more in-depth understanding of intact ecosystems (Van den Berg and Konijnendijk 2012).

Spirit of place, genius loci, vividness* or *imageability: The approach of the spirit of place presented by researchers including K. Lynch, S. Bell, R. B. Litton. This approach suggests that landscape preferences are related to the landscape features such as identifiable uniqueness, distinctive identity, imageability that evoke a vivid image of the landscape in its observer (Tveit et al. 2006; Zaleskienė and Gražulevičiūtė-Vileniškė 2014).

Landscape heritage* or *historic landscapes: Presented by D. Lowenthal and G. Fairclough, landscape heritage approach indicates that the historical dimension of a landscape is linked to landscape preferences. The approach emphasizes the importance of the cultural bonds between humans and landscape and suggests that the signs of historical continuity in landscape provide a depth of meaning and create a feeling of integrity for the community (Tveit et al. 2006; Ode et al. 2008; Zaleskienė and Gražulevičiūtė-Vileniškė 2014).

The *aesthetics of care* theory: The theory of the aesthetics of care is related to the studies of J. I. Nassauer and S. R. J. Sheppard. The theory suggests that domesticated landscapes or signs of human interaction in a landscape may cause positive feedback for landscape preferences. In this sense, landscape maintenance or "cues of care" are appreciated by observers (Nassauer 1995; Tveit et al. 2006; Ode et al. 2008; Zaleskienė and Gražulevičiūtė-Vileniškė 2014).

2.5. Conceptual Framework of the Research

Introduced in the early Meiji period (1868–1912), the idea of aesthetics in the Western sense as the philosophical study of beauty is a relatively recent one in Japan. However, aesthetic concepts, which are collectively referred to as Japanese aesthetics, have existed far longer than the philosophy of aesthetics in the west, and they have been applied within several contexts, such as art, gardens, natural features and even everyday activities (Timmons 2012).

With regard to Japanese gardens, it has been observed that the aesthetic sense used in the design of these gardens follows environmental aesthetic theories prevalent in the current literature. In this context, it is thought that the Japanese aesthetic concept responds to the requirements of the environmental aesthetic theories developed in the West. Indeed, many researchers have indicated the attractive and stimulating aspects of Japanese gardens in terms of environmental aesthetics (Appleton 1975a; Orians 1980; Kaplan and Kaplan 1989; Kaplan et al. 1998; Stamps 2014; Eliovson 1971; Carlson 2000; Kaplan and Kaplan 1989; Yang 1988; Bell 1999; Bell 2012) and Japanese gardens have been a subject for investigations on landscape aesthetics theories (Kaplan et al. 1998; Inagami 2013; Inagami 2014) and landscape preference studies (Yang 1988; Yang and Brown 1992). These studies were basically about the inner aspects of the Japanese gardens such as their spatial configuration, materials used in them, planting characteristics, preferences for styles. The studies done regarding the user preferences focused on visual landscape assessment and phenomenological explanation for aesthetic appreciation to Japanese gardens. In a cross-cultural study on landscape preferences for different landscape styles such as Korean gardens, Western gardens, and Japanese gardens, Japanese gardens were the most preferred ones regardless of cultural differences (Yang and Brown 1992).

Ulrich (1983: 109) states that "*One of the most clear-cut findings in the… literature…is the consistent tendency to prefer natural scenes over built views… Several studies have shown* *that even unspectacular or subpar natural views elicit higher preference… than do all but a very small percentage of urban views."* Gardens, on the other hand, are not pure nature, and they have been considered as artworks at the same time (Herrington 2009; Van Etteger et al. 2016). However, what makes Japanese gardens so appealing might be their feature of successfully mimicking nature, or with Ito (1972: 197)'s words *"the continuous endeavor to extract the essence of a stone, a tree, a view."* Conder (2002), who was highly impressed by spatial compositions of Japanese gardens when he came to Japan in 1877, emphasizes the importance of this given natural-view by stating that "*the laws of natural growth and distribution are closely studied and punctiliously applied in the management of even the smallest detail.*" About the aesthetic experience of Japanese gardens, particularly stroll gardens and tea gardens, Carlson (2000: 165) states that "*in them, I find myself effortlessly slipping into a state of calm and serene contemplation, marked by feelings of quiet joy and well-being.*" He suggests that the reason why it is so easy to appreciate these gardens is that their design follows the lead of nature rather than of art and that an idealized version of nature that emphasizes the essential is created in these gardens (Carlson 2000).

Current literature emphasizes the importance of nature-connection in human life. These findings once again echo to Kant's vision which he placed the appreciation of nature on the top. Indeed, although most of the world population live in urban environments today, human behavior suggests that we cannot reject our bond with nature. As evolutionary aesthetic theories explain the reason of this strong connection, some instinctive preferences and emotional responses are products of human's biological evolution. Since this evolution occurred in pristine nature, this situation has left traces in humans' way of thinking and behaving (Capellini 2017). In this sense, because the human mind has evolved in a natural context, the preferences of primitive humans in favor of survival has shaped modern human's landscape preferences and aesthetic tastes even though there is no endeavor for survival today. In this context, the reason why Japanese gardens are appreciated all around the world can be their concept in which evolutionary landscape aesthetics can be found as these gardens have the true essence of nature.

From the viewpoint of spatial configuration of daimyo gardens (stroll gardens), I suggest that one can easily or unconsciously find the proper examples to each evolutionary landscape aesthetic theory's conditions. For instance, the fact that these gardens are the living spaces for many kinds of plant species in the city; that the spacious ponds are not just a reflector or a decorative element but also a habitat for water creatures is strongly associated with the 'biophilia hypothesis' which is the evolutionary theory emphasizes the intact human need for a connection with living creatures. Habitat theory, or Savanna hypothesis, on the other hand, finds its equilibrium in Japanese gardens, somewhat surprisingly. Orians and Heergraven (1993) found that Japanese gardeners have developed a sophisticated aesthetic of tree form by selecting and pruning the specimens to create specific shapes that coincidently mimic the characteristics of Savanna trees. When we look at the daimyo gardens, one can never miss the existence of Savanna-like trees (the pine trees with special trimming technique) which points to the condition of Savanna hypothesis.

Furthermore, it is observed that these gardens meet the conditions of the information-processing theory by enabling the observer to understand and to explore more. For example, these gardens do not offer every feature at the same time; with the technique of *miegakure* (hide-and-reveal) the whole garden cannot be seen from one point, which causes the 'mystery.' One can easily recognize the 'coherence' of the pine trees and the water elements; the balanced 'complexity' of the lanterns, bridges, fences, and plants. Lastly, the circuit which takes the visitor along a path in the garden points out to the existence of 'legibility.' When it comes to the prospect-refuge theory, Appleton (1975a) suggests that his theory can be found in Japanese gardens. After citing a paragraph from Tamura's (1935) book, Appleton indicates that:

"*In spite of differences between Japan and Western garden and the "taste," it is not difficult to find an underlying unity of concept in prospect-refuge terms. …… Japanese garden lays more emphasis on refuge symbols ("dusky shades," "twilight profundity") than its dominant western counterpart ("sunny openness" "as open as possible"). In the details of design, we find in Japanese garden an entirely different idiom… Japanese garden examples convince us that an unfamiliar arrangement of unfamiliar vegetation, however much it symbolizes an unfamiliar religious philosophy, is certainly not grafted on to an unfamiliar basic composition. Here is encircling fence to create a refuge. Here is the ornamental "mount" to permit a prospect*."

(Appleton 1996)

In this context, when the design configuration of the daimyo gardens is investigated, it is seen that the equilibrium of openness-closure may be evidence for prospect-refuge theory. In these gardens, there are spaces where one can find an opportunity to see (prospect) without being seen (refuge). On the other hand, when the original design of these gardens is remembered, it is thought that the borrowed scenery technique (*shakkei)* would provide maybe the most appropriate condition for the aspect of prospect. Being in a garden which is safe could be associated with refuge aspect while having the opportunity to see far distance landscapes would be associated with the prospect. However, today there is no chance to have a view of distant landscapes due to the surrounding high-rise buildings. This situation not only creates an obstacle for the prospect of the gardens but also causes a disjunction between the gardens and their surrounding environments.

As discussed above, it is thought that the daimyo gardens in Tokyo respond to the conditions of evolutionary theories. Furthermore, these gardens reflect the conditions of cultural theories as well. For instance, constant maintenance that is given to these gardens points to the 'aesthetics of care' which may enhance the reasons for their preferability. Besides, being traditional gardens inherited from the Edo period, these gardens meet the concept of 'landscape heritage or historic landscapes' approach. Therefore, all these qualities which are embodied in their landscapes make these gardens appealing to their visitors by satisfying the conditions of environmental aesthetics.

However, based upon the previous research on the issue and logical interpretations with regard to literature review, in a broad sense it is hypothesized that the external high-rise buildings reduce the possible aesthetic experience of these gardens both regarding evolutionary theories and cultural theories which in turn cause a negative impact on the visual qualities of the gardens. The given hypothesis can be detailed regarding the research problem as follows:

i. This study hypothesizes that the intrusion of high-rise buildings into the heritage gardens' scenery causes an impairment in their prospect aspect. Therefore, the 'prospect-refuge theory' cannot be experienced as possible as it could be when the buildings did not surround the gardens.

ii. Furthermore, it is thought that the high-rise buildings jeopardize the natural essence which was sophisticatedly given to these gardens in their original designs. It is, therefore, hypothesized that this dualism between the inside and outside causes a shift in the attitudes or emotions of their observers in terms of the 'affective theory.'

iii. Lastly, due to symbolic meanings such as modernism or economic power that embodied in their physical manifestation, the surrounding high-rise buildings cause ambiguity for the spatial context of the heritage gardens. In this sense, it is hypothesized that *genius loci* or identity of the gardens is affected by modern developments.

CHAPTER 3.

METHODOLOGY

This chapter describes the research methods used to examine the research objectives and the hypotheses proposed in previous chapters (see Chapter 1 and Chapter 2). This chapter is organized into three sections. The first section presents the general methodology of the research. The second section presents how the research design is constructed in a sequential manner and which research methods are used in each step. Lastly, the third section presents the study area selected for the quantitative experimental studies of the research.

3.1. Research Methodology

As mentioned before, the previous studies on the research issue were carried out with objectivist (expert-based) research methods and quantitative data collection strategies. With an approach to fill the gap in the visual quality assessment of Tokyo's daimyo gardens in the context of high-rise building effect, the general methodology of this research was chosen to be the exploratory mixed method in which both qualitative and quantitative data collection and analysis strategies were used. Moreover, subjectivist method-approaches was applied in both the qualitative and quantitative phases of the study.

There are three models in the subjectivist method-approach namely psychophysical model, psychological model, and phenomenological model. The psychophysical model provides a bridge between measurable physical characteristics of landscape and humans' landscape preferences accordingly. The psychological model relies on human assessments such as affective appraisals towards a landscape (Daniel and Vining 1983). The phenomenological model focuses on individuals' personal experiences and related interpretations, descriptions, impressions about a landscape (Ohta 2001).

The present study integrated the three models of the subjectivist approach which is a new concept for visual landscape preference and environmental aesthetics studies to build a holistic explanation for the research problem. Therefore, the outcome of this study is expected to improve the current literature.

3.2. Research Design

The present study was designed in a sequential manner. After a review of the related literature and constructing general research hypotheses, expert interviews were conducted to constitute the qualitative method of the study. Simultaneously in the process of expert interviews, two quantitative empirical studies were carried out. After the completion of both expert interviews and empirical studies, a major quantitative empirical study was prepared based on the derived results and the literature review. In this sense, the sequential mixed method enabled to construct relationships between each step of the study. The methods and approaches used in each phase are given as follows (Fig 3.1).

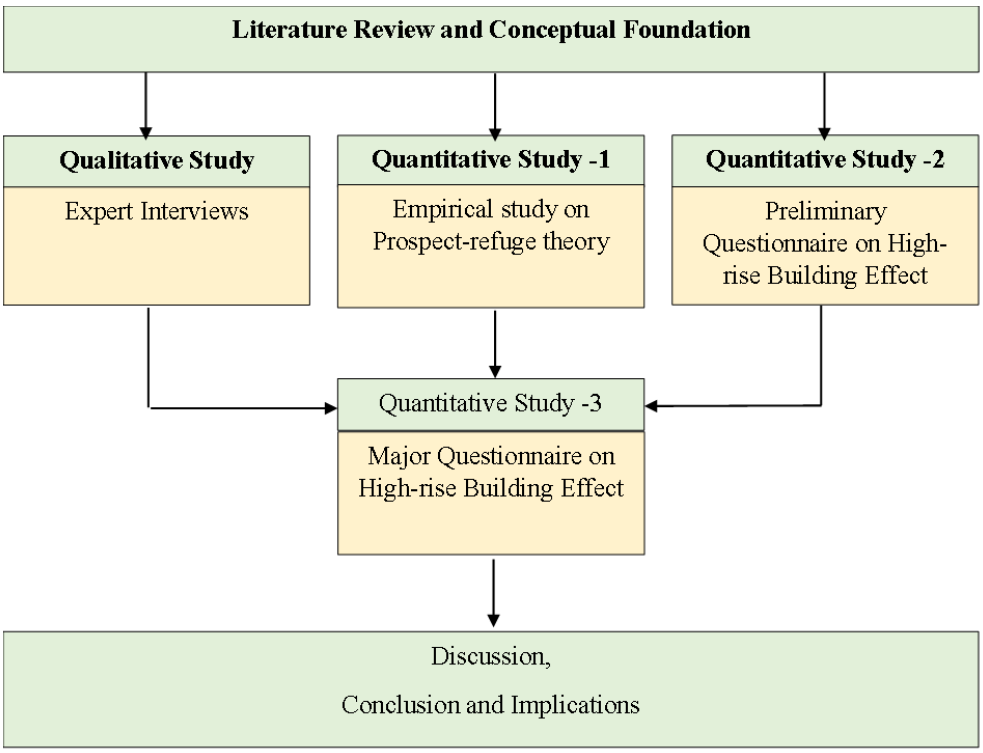


Fig. 3. 1. Research Design

3.2.1. Qualitative method study

Qualitative phase of the study consists of expert interviews. In the qualitative phase of the study, new indicators and variables regarding the research question were derived and used in the major quantitative research.

3.2.1.1 Expert interviews

To address the research problem from the viewpoint of experts and to gain a better understanding about the underlying factors of the daimyo garden's history and current situation, in-depth interviews were carried out with 15 experts in spatial planning and design disciplines. Through semi-structured interview questions, qualitative data collection and analysis strategies were used, and the phenomenological model was applied. The detailed explanation of respondent features, research procedure, analysis strategies is presented in Chapter 4 along with the results.

3.2.2. Quantitative method studies

Quantitative studies of this research consist of three empirical studies. Each study is explained briefly as follows.

3.2.2.1. An empirical study on the prospect-refuge theory

An in-situ survey was conducted in Hama-rikyu Gardens to test one of the research hypotheses. Eight sites in the garden were selected after an objective measurement and categorization regarding prospect- and refuge-related aspects along with the high-rise buildings in each scenery. 129 visitors participated in the questionnaire to assess the landscapes in terms of perceived prospect and refuge aspects and landscape preferences. In this step of the research, the psychophysical model was applied, and quantitative data collection and data analysis strategies were carried out. The details about the methodology such as site selection, participant features, questionnaire procedure are given in Chapter 5 along with the study results and discussion.

3.2.2.2. Preliminary questionnaire on high-rise effect in visitors' perception

Current literature indicated the importance of layperson's perceptions and attitudes towards the research problem. Therefore, as a preparation step for the main questionnaire, a preliminary questionnaire was conducted to gain a better understanding of the general attitude of the visitors towards the high-rise building effect on the garden. The related questions were added at the end of the previously mentioned questionnaire form. Since the questions were applied to the same selected sites, this step of the research was carried out with a psychophysical model and quantitative data collection and analysis strategies. Chapter 6 presents the questionnaire form, data collection, and analysis along with the results and discussion.

3.2.2.3. Major Questionnaire on high-rise effect in visitors' perception

The last section of the quantitative phase of the study was designed as a questionnaire to be conducted as an in-situ survey with the visitors of Hama-rikyu Gardens. In the first part of the questionnaire, a photo survey which comprises of controlled images were used as visual stimulus. The respondents (420 visitors) were required to indicate their preference and the level of given affective appraisals for each image. In the second part of the questionnaire, propositions regarding the high-rise building effect on the garden were directed to the respondents. The propositions were derived from the current literature, observations and expert interviews. In this section, psychophysical and psychological models were used, quantitative data collection and analysis strategies were carried out. The details about the methodology such as visual stimulus, respondent characteristics, questionnaire procedure, preparation of affective appraisals and propositions are presented in Chapter 7 along with the research results and discussion.

3.3. Study Area for the Quantitative Experiments: Hama-rikyu Gardens

Reflecting the characteristics of the Japanese garden art of the Edo period, Hama-rikyu is a typical grand-scale stroll-type (*kaiyu-shiki teien)* daimyo garden (Koizumi and Ishikawa 2007; Shirahata 2016). The garden is located in the Chuō Ward of Tokyo Metropolitan City and covers an area of 250,215.72 m^2 (TMPA 2008c) (Fig. 3.2).

Fig. 3. 2. Hama-rikyu Gardens' location (Source: Google Earth)

Regarding its historical, cultural and aesthetical value, the garden was declared as a Special Place of Scenic Beauty and the Special Historic Site in 1952 by the Cultural Properties Protection Law. As a national property of Japan, the garden is managed by Tokyo Metropolitan Park Association presently, and it has been open to the public since 1946 (TMPA 2008c). The garden is preserved respectfully regarding the garden's authenticity and the some of the elements of the garden such as teahouses which were lost during the Second World War were rebuilt according to their original features. Thereby, often called an 'oasis in central Tokyo,' the garden attracts both Japanese and foreign visitors by being a unique recreational space and cultural asset in the city.

3.3.1. High-rise building intrusion into Hama-rikyu Gardens' scenery

Shinji (2015) states that "*the garden here was once even more impressive than it appears today*." The reason for Isoya Shinji's statement, as might be expected, is the dense urbanization which has been occurred in the surroundings of the garden. Indeed, today the intrusion of high-rise buildings into the garden's scenery is significantly conspicuous, as one may encounter with a contrasting landscape from almost every angle of the garden. Hence, there has been an ongoing debate about the impact of external high-rise buildings (Shinji et al. 1989; Koizumi and Ishikawa 2007; Akasaka 2014) on the scenery of the garden as well as loss of borrowed scenery (Shinji 2015).

As it was discussed before (see Chapter 2: 2.1.2.3. Hama-rikyu), being in a special location as a waterfront garden, Hama-rikyu once had an uninterrupted view of Edo (Tokyo) Bay with Odaiba and Boso Mountains loomed in the far distance. Furthermore, the views of Shinagawa river, Mt. Fuji, Mt. Tsukuba, and also Edo Castle (today Imperial Palace) were incorporated into the garden's scenery. However, the surrounding area of the garden landfilled after the Meiji period, and high-rise buildings lined up in recent decades. This drastic transition of the surrounding environment has caused both obstructions of borrowed sceneries and visual impact on the garden (Shinji 2015; TMGBCPD 2017).

By an investigation on historical aerial maps and old photographs, the process of the land transition can be observed (Fig 3.3). As it is seen in an old map (Fig.3.3.1) that dates to 1884, there was no landfill around the garden, and the view to the ocean was wide-open as it is observed from an old aerial photo (Fig. 3.3.2) taken in 1904. Another bird-eye aerial photo (Fig 3.3.3) taken in 1944 shows the reclaimed lands of Tsukishima, Kachidoki, and Takeshiba were settled down in the surrounding of the garden by landfill. However, an old photo (Fig 3.3.4) taken in 1955 from one of the artificial hills (Mt. Ochin) in garden shows that the view to the ocean was still open with sailing boats at the background as there was no high-rise building development on the reclaimed lands yet. Fig. 3.3.5 presents the subsequent development in the surroundings of the garden. The landfill at Tsukishima side was extended, and the land surrounded the garden as a result. In 1955, Shiodome river which used to be in the northwestern side of the garden landfilled; the width of its moat was narrowed down from 45 m. to 7m. Subsequently, in 1962, metropolitan highway was constructed which passes by from the north to the west side of the garden. Finally, in 1965, a tile breakwater was constructed on the east side of the garden as it is shown in Fig. 3.3.6. (TMGBCPD 2017).

By the high economic growth of Japan followed by the years after the Second World War, high-rise buildings have started to be built on the surrounding lands of Hama-rikyu Gardens (Fig. 3.4). Most probably the most significant impact was put on the garden by the urban redevelopment project called Shiodome. Shiodome redevelopment project progressed from 1995 after Shiodome freight station (Sio-site) was abolished in 1986. The project covers a redevelopment area of 30.7 ha on the west and north sides of the garden (Nishikawa 2003). Lined up in 2004, Shiodome project's high-rise buildings have affected the view of the garden from north to the west dramatically (Fig.3.4.3). Furthermore, high-rise developments of Tsukishimi and Kachidoki on the southeast (Fig. 3.4.4), and of Takeshiba on the southwest (Fig. 3.4.5) became visible from inside the garden (TMGBCPD 2017) whereas the northeast of the garden is unspoiled comparatively (Fig. 3.4.6). However, the high-rise buildings on this side are also visible once the garden is viewed from one of the artificial hills.

Fig.3.3.1. Aerial map (1884) (Japan Foundation Center)

Fig.3.3.2. Aerial photo (1904) (The Imperial House Agency)

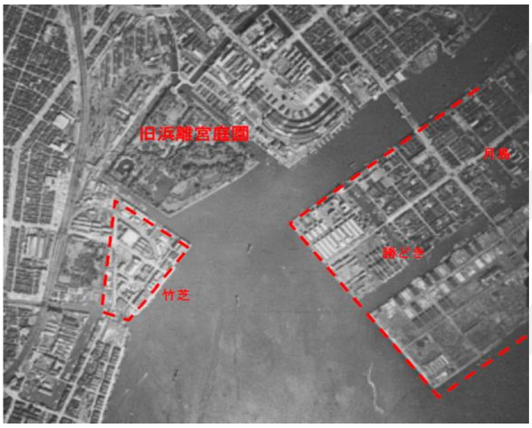


Fig. 3.3.3. Aerial photo (1944) (Geographical Survey Inst)

Fig. 3.3.4. Photo from Mt. Ochin (1955) (TMPA collection)

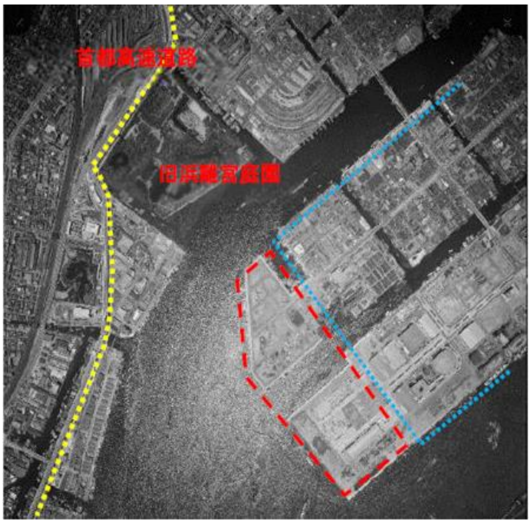


Fig. 3.3.5. Aerial photo (1963) (Geographical Survey Inst.)

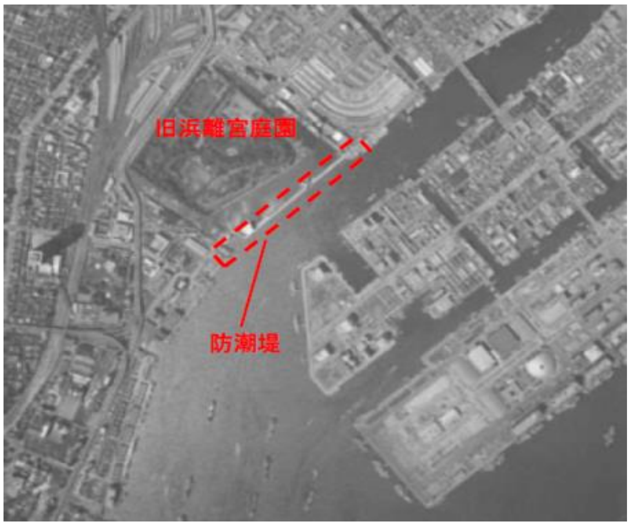


Fig. 3.3.6. Aerial photo (1971) (Geographical Survey Inst.)

Fig. 3. 3. Surrounding environment transition in Hama-rikyu (retrieved from TMGBCPD 2017)

Fig. 3.4.1. Hama-rikyu bird-eye view (1955) (TMPA collection)

Fig. 3.4.2. Hama-rikyu bird-eye view (2018) (Google Earth)

Fig 3.4.3.View to the northwest – Shiodome

Fig 3.4.4. View to the southeast – Kachidoki

Fig 3.4.5. View to the southwest – Takeshiba

Fig. 3.4.6. View to the northeast – Tsukiji

Fig. 3. 4. High-rise building intrusion to Hama-rikyu's scenery

3.3.2. Reasons to select Hama-rikyu Gardens as the case

From the expert interviews which is presented in the next chapter (see Chapter 4), it was deduced that Hama-rikyu Gardens was the most mentioned and discussed one among four daimyo gardens which the interviews were shaped around. For instance, in a comparative statement, interviewee (BU 3-11) indicated that "*Hama-rikyu has many buildings around its borders. But, Rikugien does not have that much…*" Besides, HJ stated that Hama-rikyu Gardens, due to its location, is surrounded by many high-rise buildings and he specified this situation of the garden's scenery as the typical case in which the opinions are divided ("*Some people appreciate, some people criticize*"). On the other hand, he found the intrusion of Tokyo Dome into Koishikawa Korakuen garden as the unquestionably worst case by stating "*I think there is no one who appreciates this combination.*" Furthermore, some experts indicated that Hama-rikyu Gardens might be the only daimyo garden among the four gardens from where one could experience borrowed sceneries such as the distant view of Mt. Fuji in the past.

Due to its high conspicuousness level, indeed, the intrusion of high-rise buildings into the garden's scenery has been a subject for some studies, scholar commentaries and laypersons' web-shared interpretations such as blog posts. For instance, Shinji (2015) thinks that "*high-rises erected around it (Hama-rikyu Gardens) have seriously devalued the landscape*" and remonstrates the surrounding high-rise buildings by stating "*this highly artistic landscape, in harmony with nature, has been destroyed by today's careless rush to erect high-rise buildings*." In the same commentary, by stating "*Japan's proud, priceless early modern culture is being lost*", Shinji (2015) finds the intrusion of high-rise building as a threat to the Japanese culture which is symbolized by Hama-rikyu Gardens in this case.

In his article about the lost views of Tokyo, Akasaka (2014) criticizes the juxtaposition of the high-rise buildings and the garden by stating a "*hopeless setting*." He thinks that the architects involved in these high-rise projects did not take into account the context and relationships of the space holistically. Besides, he objects the statement of a master architect of Shiodome project who gave a comment about the view which is taken from the windows of the high-rise buildings: "*we have a good view to the famous garden. That is shakkei."* Akasaka (2014) argues that the architect's usage of the *shakkei* word "*obviously abused*" and "*a huge mistake*."

When the given issue is searched on the internet, it is possible to see numerous visitor comments. One of them which is a web blog post (Anonymous 2016a) is striking with its title of "*A modern concept of shakkei*" as the modern high-rise buildings have replaced the original borrowed sceneries of the garden. Furthermore, some people indicated their appreciation for the contrast between the historic garden and modern high-rise buildings by using some words such as 'admiration' or 'amazed' (Anonymous 2008; Anonymous 2018; Anonymous 2016b). There are also comments in which some visitors find the surrounding high-rise buildings as the factor what makes the garden appealing (Anonymous 2012) and as the reason to go to the garden (Anonymous 2016c).

As mentioned before, previous studies (Shinji 1989; Koizumi and Ishikawa 2007) which were conducted in Hama-rikyu Gardens revealed the negative impact of the high-rise buildings on the garden's scenery. These studies were done with an expert-based approach by objectivist research methods. However, considering the divergent perceptions of different stakeholders, it is still conceivable whether the visitors of this garden find the intrusion of the modern buildings as an eye-sore which devalue the garden's scenery, or they find them awe-inspiring which adds a new value to the garden. Thereby, Hama-rikyu Garden was selected as the research setting to examine the impressions that the surrounding high-rise buildings create upon visitors' experience of the garden, as no previous studies have considered the issue in the context of visitor perception.

CHAPTER 4.

EXPERT INTERVIEWS

4.1. Introduction

Expert is defined as a person who is responsible for the development, implementation or control of solutions/strategies/policies and she/he has privileged access to decision processes (Meuser and Nagel 1991). Experts can be seen as ‘crystallization points’ for practical insider knowledge about a research problem. Therefore, expert interviews are an appealing option for empirical researches (Bogner et al. 2009).

This part of the study, as a start point, was concerned with understanding some key concepts such as the underlying meaning of the term *shakkei*, historical process of daimyo gardens and their surroundings that are related with the urban scheme of Tokyo. More importantly, it was necessary to have a discussion with the experts to understand the social relevance of the research.

The interviews aimed to understand the research problem from the experts’ point of view. Besides, it is thought that to have in-depth interviews with experts would help to find out possible solutions for cultural heritage preservation actions if there is a consensus.

There are some studies which showed the contradiction between experts and the public regarding landscape preferences and perceived meaning from them (Devlin and Nasar 1989; Groat 1982; Nasar 1989; Wilson and Canter 1990). Based on this information, this study also aimed to see the differences or similarities between the perceptions of experts and public (garden visitors) regarding the high-rise building effect on the gardens.

4.2. Methodology

Bogner et al. (2009) suggest that talking to experts as a start in the exploratory phase of research is a more efficient and concentrated method of gathering data than quantitative surveys. Thereby, a qualitative approach was selected for the study presented in this chapter.

4.2.1 Sampling

The interviewee of this study is composed of 9 academicians from landscape architecture and/or urban planning field, 4 landscape architects/spatial planners from the private sector and 1 landscape architect who works in the municipality (Table 4.1.). In total 15 experts who have familiarity with the research problem were interviewed. All the experts interviewed are competent authorities in spatial design and planning disciplines.

Table 4. 1. Experts' status

Expert code	Profession Field	Position	Interview Date
AZ	Spatial planning and history	Academic	26.12.2016
BU	Landscape planning	Academic	17.05.2017
CY	Landscape science	Academic	01.06.2017
DT	Spatial planning and design	Academic	03.06.2017
EN	Landscape management	Academic	05.06.2017
FM	Landscape design	Academic	13.06.2017
GK	Landscape planning	Academic	13.06.2017
HO	Landscape architecture	Private sector	21.07.2017
IC	Spatial planning and history	Academic	24.07.2017
JW	Spatial planning and tourism	Academic	31.07.2017
KC	Landscape architecture	Municipal	24.05.2017
LA	Spatial planning and design	Private sector/Academic	22.02.2018
MI	Landscape architecture	Private sector	06.03.2018
NE	Landscape architecture	Private sector	07.03.2018
OR	Landscape architecture	Private sector	08.03.2018

4.2.2. Data collection

A semi-structured interview was prepared based on the research problem. Semi-structure allowed flexibility for both the interviewee and the interviewer so that in-depth exploration of the topic could be possible. Data were collected from December 2016 through March 2018. Interviews were lasted 1 hour on average. The interviews were conducted face-to-face and were recorded with the permission of the interviewees.

4.2.3. Data analysis

Interview transcripts derived from the recorded interviews were repeatedly read to determine the core of the research problem in the experts' point of view. Differences and similarities in their attitudes towards the questions or unique perceptions were determined and organized categorically by continuous reviews on the transcripts.

Data analysis process was aided by the use of a qualitative data analysis software called NVIVO that assisted the analysis process by easing the classification and arrangement of the information gathered from the experts.

4.2.4. Interview process

The interview started with personal information about the expert such as how long she/he has been engaged in her/his profession. The questions regarding the main topic started with the experts' impressions about the daimyo gardens. This was followed by the questions regarding the research problem such as the meaning of borrowed scenery, high-rise building's effect on the heritage gardens, and possible conservation and planning strategies for the future. Lastly, with an attempt to open up a discussion about the planning scheme of Tokyo in both spatial and cultural aspects, a hypothetic question was directed (Appendix 1).

4.3. Results and Discussion

The semi-structured interviews done with the experts yielded with seven main themes which are labelled as 'value of the daimyo gardens for the city,' 'concerns about the management and conservation of the gardens,' 'high-rise buildings' effect on the gardens,' 'meaning of *shakkei* in the past and today,' 'reasons for the drastic change in the gardens' scenery,' 'possible solutions for conservation actions,' and 'urban scheme of Tokyo.' Each theme is presented with their related sub-themes as follows.

4.3.1. Value of the daimyo gardens for the city

When the experiences of the experts in the context of the daimyo gardens are examined, it is observed that their impressions are generally positive. Many experts have emphasized the importance of the gardens for the city with keywords such as historical space and nature in the city. This theme, therefore, shows the importance of the gardens in urban landscapes basically formed with artificial materials such as concrete, steel, and glass. In addition, it is noteworthy that another theme emerged by the experts who expressed the importance of these gardens in achieving nature consciousness. In this regard, their contribution to the urban landscape can be interpreted as the presentation of nature within the city. Moreover, some experts emphasized that contemporary designs or urban planning schemes should be inspired by the concept of the daimyo gardens for a better future.

4.3.1.1. Daimyo gardens as representative of nature

Even though we live in the central urban area of Tokyo, fortunately, we can enjoy nature - an artificial nature - in these gardens. I think this is a miracle and unusual in the world. Gardens can be found in the suburban areas in Western countries. However, the situation is very different in Tokyo; because we did not have city walls from the beginning (AZ 3-1)

Daimyo gardens are the places where nature has been kept, not a real nature but controlled, human-made nature. In the city, surrounded by concretes and glasses, it is nice to *have a place with some fresh green area and water. The gardeners or designers designed those gardens in a way that fits into nature or takes the image of nature, inspired by nature, sort of simulate the nature* (DT 3-1).

Children of today do not know how beautiful nature is – they do not have the opportunity to experience real nature. If the children go to these gardens in the city, they can see the view of nature; they may realize how nature is. I think every daimyo garden must have an interpreter or facilitator to teach the children how and why these gardens were made, what the elements of the garden represent. Then, the children may start to think about a space without buildings, they may realize buildings are not necessarily a part of everyday life. That is why these gardens are greatly important in our city. By taking them as an example and learning about their concept, we can start to talk about nature-human and the space relationship (EN 4-4).

Because they have natural-look, their design is unique (LA 3-1).

4.3.1.2. Daimyo gardens as historical value

*Daimyo gardens are the spaces where I feel the history; they are an oasis in the city (*GK 3-1).

Due to their (daimyo gardens) big-scale, it is very nice to have open views which are rare in the city. These gardens are the places where I can feel the history and culture of the past (IC3-1).

They are rare historical places, traditional open spaces in an urbanized area (LA 3-1).

4.3.1.3. Daimyo gardens as inspiration for new landscape designs

I usually visit those gardens as a reference for garden design (HO 2-1).

When I design a project, I sometimes visit there to learn about how to enclose a space with the topography or greenery. There are so many things that we can learn from those gardens. That is why they are very important heritage. They are inspiring for the new designs (EN 3-5).

We, as designers or planners, have a lot to learn from the landscape design of the daimyo gardens (EN 4-4).

4.3.2. Concerns about the management and conservation of the gardens

Most of the experts suggested that the management and protection of the gardens are appropriate in the context of their interior landscapes. On the other hand, a significant number of experts mentioned the inadequacy of garden management and conservation in terms of planning decisions that have been taken for the surroundings of the gardens. Expert opinions on this issue center upon the suggestion that the garden management should have the strength to be able to make decisions and take actions about the surrounding landscapes rather than remain restricted to the management of the gardens' interior landscapes. Concordantly, most of the experts expressed that proper protection has been provided to the gardens with respect to their historical aspects so that their original designs have been preserved as much as possible. On the other hand, it is important to note that the experts emphasized the fact that such preservation pr respect is not the case for their surroundings due to the emergence of high-rise buildings. The opinions of the experts, especially the statements of BU and IC, reinforce the perception that these gardens constitute a meaningful whole with the surrounding landscapes and the proper preservation actions, therefore, should not be limited to the internal parties.

As far as I know, the inside of the garden is basically pretty much nicely managed (DT4-1).

I think the management of the gardens is sufficient (EN 4-1).

I think gardening and cleaning are done well (GK 4-1).

Yes, I think so. Tokyo Metropolitan has enough money to manage these gardens well. (MI 4-1).

I do not think they are managed or preserved enough. The reason is that all the condos or buildings around the daimyo gardens get the benefit of the gardens as open space, as green production. Once it is called 'preserved site,' it cannot be changed drastically without the approval of the Japanese Government – like 'bunkacho' kind of authority (NE 4-2).

I think that the interiors of the gardens are preserved well, but not the surroundings. In fact, the surroundings of the gardens are also a part of their original concept as much as the inside of the gardens (IC 5-2).

The environments of the gardens have changed drastically in Japan. So, in total the daimyo gardens are not protected enough (LA5-2).

In terms of tourist attraction, they have done many things. They provide audio guide etc. However, in terms of town planning or landscape, there is a big problem. So, we cannot say the same for the surroundings (BU4-4).

4.3.3. High-rise buildings' effect on the gardens

The discussion raised about the surrounding high-rise buildings' effect on the heritage gardens resulted in a fact that a significant number of experts' ideas gathered in a theme which can be called 'negative effects of the buildings.' The experts argued that the inhabitants or the owners of the surrounding high-rise buildings take advantage of the beautiful views taken from the gardens while the buildings reduce the value of the gardens' views.

The results related to the topic of high-rise buildings' effect on the gardens yield with three main groups of experts: (1) the experts who are strongly opponents of the current situation; (2) the experts who actually do not like the intrusion of high-rise buildings into the gardens' scenery but find the situation helpless; (3) the experts who find a positive aspect in the current situation.

4.3.3.1. Negative effects of the buildings

The discussion emerged by the first group that consists of the majority number of experts focuses on mainly three issues. The first one is the aesthetic issues with the keywords such as 'inappropriate,' 'disgracing,' 'damaging the gardens' historical taste,' 'pressure,' ‘dwarfing the garden.’ The second one is the problem of damage in identity, as the experts expressed that the buildings affect the authenticity of the gardens so that such scenery can be found somewhere else in the world. Another discussion on the negative effect of the buildings was gathered under a theme which can be named as obscuration of distant views. Experts stated the loss in distant views or borrowed sceneries, such as Mt. Fuji, as one of the negative effects of the buildings. Besides some experts argued that the buildings cause a shift in the focus of the garden, as the buildings take the attention somewhat before the garden elements. Lastly, another issue discussed was the social inequality which is resulted by the gap between the views of high-rise buildings’ inhabitants who can overlook the gardens and the views of the garden visitors who are forced to see the buildings that come into the views.

Perhaps the most ironic expression here was expressed by EN who indicated that although the designers of the gardens considered every detail very carefully, obviously they could not foresee the future decades would ruin their sophisticated gardens: *The designers of the daimyo gardens gave a very deep thought on the views of these gardens. They thought about the Shakkei, they thought about from where the moon rises, where the sun goes down. However, maybe the only thing they could not think of is today’s situation. They could never think that their beautiful gardens would be surrounded by cluster high-rise buildings and the scenery which they had created carefully would be ruined* (EN 8-1).

4.3.3.1.1. Aesthetical issues

Unfortunately, I think many parts are not appropriate. Because of the progress of the development of the surrounding area, the scenery which is not clearly in harmony with the garden comes into view (CY 7-2).

Of course, the effect of high-rise buildings is not good. They should not be here. They should not be located in a place where can be observed from inside the garden (DT 10-5).

Those are the things that look like more dwarfing the garden (NE 17-5).

It is a feeling of pressure. Moreover, there is a possibility that someone is watching you from the buildings (MI 10-6).

The buildings surround the gardens are very disgracing. Where can be the Japanese aesthetic value found in such a space? (NE 7-2).

Surely the buildings devalue the gardens. If they understood the historical value of the gardens, high-rises would have been restricted (GK 11-1).

4.3.3.1.2. Damage in identity

The authenticity of the gardens is being affected (IC 11-1).

It does not look like Japanese scenery. It could be anywhere, like Taiwan, Taipei, or some kind of other Asian countries like China or even like Korea. Similar pictures could be easily taken. Also, nobody can say that this green area belongs to a part of the traditional Japanese garden (NE 16-10).

As a sort of professional person in this field, I would think that it is very strange looking and historical or cultural values are not respected in this country (DT 16-3).

What we care has to be the authenticity of the gardens. In this sense, those high-rise buildings should never have been constructed in the surroundings (BU 8-1).

The contrast of the modern buildings and the historic garden is odd. 'Well, this is Tokyo!' kind of impression (DT 19-4).

4.3.3.1.3. Lost distant sceneries

It is a pity. Especially when the high-rise buildings hide the view of Mt. Fuji, that is not good. (FM 10-1)

... But, if borrowed scenery had been protected, the attractiveness of the daimyo gardens would be higher (LA 8-8).

Although there were some specific points to have a view of Mt. Fuji, they have vanished in time, and the land has been filled with high-rise buildings (MI6-1).

Since urbanization started to progress and now we need artificial lands, sadly, views (Chobo) is blocked by artificial constructions and the past taste (Fuzei) has been lost (GK 7-1).

4.3.3.1.4. Shift in focus

When the eyes stare in the scenery (since we tend to look at the scenery of the buildings), I think that it becomes hard to notice the main point in the garden (CY 10-11).

The focus is the building. I do not want to focus on this building, but the eye directly goes to the building (HO 18-2).

*Although we want to focus more on the garden, our eyes lose the attention because of the buildings (*AZ 19-1).

4.3.3.1.5. Social inequality

Routinely, I think the problem was that they started to build high rises. The gap between looking over from the high-rises and looking up from the gardens is too big (GK 10-1).

Almost all the high-rise mansions or office buildings emphasize that they have a view of the gardens. To have a garden view is their strongest quality. So, they have an economic benefit from the gardens. But, I think that they bother and damage the view of daimyo gardens (BU 10-1).

... all the condos or buildings around the daimyo gardens get the benefit of the gardens as open space, as green production (NE 4-2).

Of course, for the people who construct the high-rise buildings and for the real estate, these gardens have big value. However, this is very egoistic. Only they enjoy. For the people who visit the gardens, the value of the gardens is reduced (AZ 11-1).

4.3.3.2. Non-direct expressions about the effect of the buildings

Some experts underlined that the visual effect of the buildings would possibly be related to their distance from the gardens and their height, design, or scale as surrogates for conspicuousness level.

4.3.3.2.1. Depending on the design/scale/location of the buildings

It depends on the scale and shape of the buildings. For example, in the case of Hama-rikyu Gardens, the high-rise buildings look like a big wall behind the garden (OR 10-2).

If the high-rise buildings are very close to the gardens, they devalue the scenery. (FM 11-2)

The distance/ space from the garden or viewpoint is more critical than just mere height. That is a sort of proportion; what kind of length and height is appropriate to make you feel comfortable (NE 11-2).

The building shape is effective in this sense also. Maybe some kind of buildings will be recognized as a positive effect, and but some kind of buildings will be negative. It depends on how the buildings are designed and distributed to the area (OR11-3).

4.3.3.2.2. Accepting the reality

As living in Tokyo, our eyes are too much accustomed to this view. Our eyes are very adapted to accept this. It is not an unusual view for me. By the effect of living in Tokyo, visiting, using central Tokyo, this view is not so beautiful but can be acceptable (AZ 16-4).

I accepted the fact. It is kind of a feeling that 'what to do,' 'let it go,' 'I cannot help it' (EN 10-4).

We have to accept reality. However, I do not like it. We need to think in the way of a new landscape mind to accept these high-rise buildings. But it is difficult (LA 10-4).

4.3.3.3. Positive effects of the high-rise buildings

There were some experts who expressed some positive aspects of the buildings. FM and HO stated that the skylines that the high-rise buildings created could be a positive aspect for the gardens. A distinctive point of view was presented by KC who suggested that the high-rise buildings around the gardens may be useful for way-finding so that they improve the legibility of the gardens and the high-rise buildings can be perceived as landmarks.

4.3.3.3.1. Buildings as a new skyline

But, for example, in the case of Hama-rikyu, the buildings are a little bit far. In that case, the existence of high-rise buildings is sometimes interesting. Because they build a new skyline (FM 11-5).

The building itself is not so beautiful, but I think the mass of the buildings creates a skyline, a new skyline. So, those skylines can be a frame for the garden. (HO 11-6) *Creating a frame is a positive effect. Maybe the design of the garden and skyline are totally different. This situation creates a contrast between the artificial landscape and human-made natural garden, between traditional and modern* (HO 11-7).

4.3.3.3.2. Buildings as landmarks

One can find their way. Normally, in a big garden, we easily lose our way. So, a high-rise building can be a landmark. And, they make it easier for us to understand where we are (KC 11-7).

4.3.4. Meaning of *shakkei* in the past and today

The discussion about the meaning of *shakkei* was concentrated on the new meanings ascribed to the term. Majority of the experts have indicated that to call high-rise buildings as *shakkei* is not possible since the term is strongly connected to natural views and a balanced human-nature relationship. Furthermore, AZ and BU argued that the promotion of the high-rise buildings with the word of *shakkei* which refers to the gardens is not a proper attitude and is related to merely profitable benefits.

Originally, the technique of Shakkei was very interesting. They look at the gardens like a frame. In this frame, the garden is the image close to you and Shakkei is the image that is far away such as mountains or sky. You cannot really design everything; you can design what is close to you or what is in the boundary of the garden, but you cannot design mountains. So, I think it is a unique idea to include surrounding views by Shakkei. The situation today is far different due to the buildings (DT 6-2).

Shakkei is usually a natural element. Maybe the designer planned to use the natural mountain as a far scenery. In a modernized area, especially in an urban area, there are many buildings which shape the skyline. So, nowadays it is impossible to practice Shakkei in the old way (FM 7-2).

People have forgotten about shakkei. There are many ugly buildings that are located here in 'enkei' and that bazaar the entire vision or the image of the garden, unfortunately. It cannot be called Shakkei (DT 7-2).

A sky can be even a shakkei but not the buildings (DT 8-9).

It is difficult to call the buildings as shakkei in the original meaning (OR7-2).

Now the meaning of shakkei has changed. For gardeners, owner of the gardens appreciated the surrounding landscape. So, they arranged a good relationship between the *garden and nature; very ideal combination. But now, we cannot say Shakkei for the situation where there is a historic garden preserved well and surrounding areas area transforming for themselves. So, there is no relationship. Original gardens are preserved for their value of the Edo era , but the surrounding part is changing for contemporary purpose. This is not shakkei. This is a very negative and passive change. People who use the surrounding area, they enjoy the Shakkei. This is not a real shakkei. This is another value which is enjoyed by the owner of the surrounding high-rise building. One should take care of the use of shakkei* (AZ 7-3).

Today, the term of shakkei has been changed by some authorities. For example, they call the high-rise buildings as a new concept of shakkei. The advertisements say that 'your shakkei will be the daimyo garden.' These are not proper (BU 8-3).

In contrast with the expressions above, there were some other approaches which were contradictory to the traditional meaning of *shakkei*. OR suggested that if the term is redefined, the buildings can also be the elements of *shakkei*. HO, on the other hand, indicated that elements of *shakkei* could be changed according to time and space. Furthermore, KC indicated that today the distant landscapes can be viewed from the top of high structures such as Tokyo Tower rather than from the gardens.

If we can redefine the Shakkei in contemporary ages, then we can call those views as Shakkei. It was not designed intentionally in original cities, but after the development, we can experience a view similar to the composition of shakkei. So, first, we have to redefine the meaning of shakkei (OR7-3).

Shakkei, background view is very important. But, I do not think the background view must always be the same through the centuries. Change is possible and indispensable due to the urbanization in the city (HO7-3).

Shakkei is including the outside scenery to the inside. For example, especially in Tokyo, *today we can have shakkei from Tokyo Tower* (KC 7-3).

4.3.5. Reasons for the drastic change in the gardens' scenery

Another topic which was discussed during the interviews was the cause and effect relationship in the context of the recent situation of the gardens' surroundings. Most of the experts bemoaned about the insufficiency of the laws and regulations. They stated that land-use decisions in the urban planning process that are also related to the laws and regulations are the most effective reasons for the contemporary views taken from the gardens. The experts pointed out the underlying reasons for the lack of proper restrictions in the gardens' surroundings. NE and LA argued that the characteristics central to capitalism are the main reasons for the emergence of the high-rise buildings at the surroundings of the heritage gardens. They suggested that as a usual logic in capitalism, private ownership has an economic benefit from the gardens and the value of the land. Similarly, DT and IC pointed out the fact that financial activity has the priority in the decision making process. Some experts like GK and BU emphasized that the value of the gardens has been underestimated or has not been taken care enough by the planning authorities. Regarding this, NE suggested that there is a need for a common consciousness about the importance of these heritage gardens so that the cultural values would not fall victim to capitalist mind.

Number 1 is capitalism. They take advantage of the garden. That is the way I feel. Moreover, everybody needs to realize the value of these gardens to the people, to the city, and for the future of Japanese culture, the Japanese sense of aesthetics (NE 12-1).

Free capitalism and Japanese mind on the landscape is the reason for this situation. I think Japanese people do not feel (notice) the change of landscape. They have a very free mind about the change in the landscape. Particularly, developers and landowners in urban areas want to get much money to manage the land and the building. It is a very natural mind in an *urban area* (LA 12-1).

The reason is the too flexibility of the laws. Even though there is a law-regulation system to control the developments surrounding the heritage gardens, when the socio-economic conditions change, authorities would choose a comprise way (AZ 12-1).

I examine that the beginning of the mistake was they did not make any restrictions because they did not have an understanding of the gardens' value (GK 11-1).

I think this is the result of that people from the architecture department and developing department in administration underestimate the controls of the landscape without thinking of the historical value of gardens (GK 10-7).

The regulations are not currently fully effective, as there are already many high-rise buildings around the gardens. Besides, land-use regulations in urban planning are one of the realistic reasons for the change; almost every area is designated as a developing area where it is allowed to build high-rise buildings (OR 12-1).

The most significant problem is that there was no regulation which cares for preserving the garden views ten years ago. And, I am not sure if the current regulation is sufficient or effective (BU 12-1).

I think that the regional plan of the surrounding area did not go well (CY 12-2).

Economic reasons… Since the land prices are high, once developers or the government noticed the value of it, they have piled up floors to make it economically reasonable. This is too much economically oriented development which I am against to (DT 12-1).

Economic activity is the main reason (IC 12-1).

The population density has increased. This is one of the biggest reasons why people need to build high-rise buildings (HO12-4).

4.3.6. Possible solutions for conservation actions

The expressions on the topic which is related to the practicality of *shakkei* technique in modern times present a pessimistic point of view regarding bringing back past borrowed sceneries such as Mt. Fuji into the gardens' sceneries. For instance, LA and MI pointed out that to sustain the traditional concept of *shakkei* is almost impossible considering the current situation of Tokyo (*It is difficult to maintain the traditional shakkei in Tokyo* (LA 7-1)). Moreover, MI indicated that any afford to protect *shakkei* in the conditions of modern times might be meaningless (*It is very difficult to protect the original shakkei in Tokyo, and maybe it is also meaningless* (MI 7-1)). Besides, most the of the experts like JW presented that to change the current situation of the surroundings is not possible, as the high-rise buildings still have economic importance (*It is difficult to change the contemporary situation of the surroundings. It requires an economic foundation* (JW 11-2)). On the other hand, some experts expressed the importance of the laws and regulations for a possible change in the surroundings of the gardens. Besides, some experts argued that actions from inside the gardens could be taken for ameliorating the views. Furthermore, there were some experts who presented an optimistic viewpoint for the future and who emphasized the importance of common awareness of the gardens' values as cultural heritage. These themes are presented below.

4.3.6.1. Laws and regulation for protection

Some of the experts suggested that the laws and regulations would be the most efficient way for proper control at the surrounding developments. GK argued that although it is not easy to change the current situation, some restrictions should be activated for new projects and no more high-rise buildings should be constructed on the heritage gardens' surroundings.

I think there should be some building restriction or plan zoning that limits the location *of buildings and limits the height of the buildings* (DT 10-1).

Since it includes very far and wide area, it is very difficult to control the shakkei itself. But, it is better not to build very high buildings just beside the gardens. The land use and building stories should be considered (FM 10-1).

It is not easy to make a change for already constructed ones, but it is important to make restrictions for future buildings. It is important not to let any high-rises to be built anymore. Once the restrictions are made, already built buildings should be re-constructed to fulfill the restrictions in time (GK 13-1).

Land-use management is the most effective way to control their surroundings. It requires some discussion among all the stakeholders (OR 13-2).

4.3.6.2. Ameliorating the views from inside

Some experts suggested that actions from inside the gardens such as constructing green barriers or green walls can be a solution to lessen the negative effect of the buildings even though such an attempt would not bring back the borrowed sceneries.

I think it is impossible to control background views. But, sometimes we can control those from the inside of the garden by creating some obstacles to block unwanted views. However, since these are heritage gardens, it is almost impossible to do any action inside of the garden (HO 5-2).

Changing the surroundings is difficult. But, by planting some trees inside of the gardens, the impact of the buildings may become lower. We can cover the view of high-rise buildings in this way (LA 12-1).

Raising the ground with trees means abandoning the shakkei; it is just covering the background. However, that could be a solution to maintain a good atmosphere. In that way, the *traditional atmosphere which the garden has itself could be maintained* (MI 8-16).

If an area is designated as a development area, what we can only do is to protect the garden itself from inside. It is too late for the surroundings (KC 13-1).

4.3.6.3. Hopes for the future

Experts like BU and IC emphasized the given importance to financial issues. They, therefore, argued that an ultimate change is not possible soon. However, they had hope for the far future. IC suggested that urban lifestyles and relatedly architectural trends can be changed in the future. Accordingly, today's high-rise buildings may lose their importance if their residences are not enough. Similarly, DT pointed out to the fact that today's modern high-rise buildings are not the definitive reality forever, as those buildings may become out-of-fashion in the future.

According to the zoning system, land-use should be determined. But, it is impossible to change the current situation now. Because the economic value of the buildings may be higher than the gardens, but, maybe 100 years later, there might be a possibility of change (BU 12-1).

The landscape is changing because of economic issues, not depending on any ideal methods. Owner of the buildings cannot maintain the high-rise buildings if all the floors are not filled. Nowadays, wealthy lifestyle such as biophilic styles – living with nature – is coming to the buildings. That kind of trends may bring better economic solution so that building styles may change in the new generation. So, it depends on lifestyles in the future (IC 13-1).

Those high-rise buildings are new today. However, in 30-50 years from now, it will be very difficult to maintain those buildings. Now they may look fashionable, and some people like them. However, in the future, they can be deteriorated, nobody can take care of them, and they can be just abandoned towers (DT 13-3).

4.3.6.4. Collective awareness for the protection

Some experts emphasized the importance of awareness of cultural values of the heritage gardens. EN and KC stated that if the people who live in the city were aware of what they had in the past, it would be possible to protect natural views that would strengthen the nature-human relationship. AZ suggested that awareness and citizen-movement can be a solution to stop such developments. NE argued that the aesthetic values of traditional Japanese culture should be carefully passed down to the younger generation for the sustainability of the values.

The awareness which comes with proper education is very important to take back natural sceneries. People should be aware of what they had before. This city life causes a disconnection between nature and human (EN 12-2).

Today, most people do not know what is shakkei. If people cared about borrowed scenery, then the situation could be changed. So, it depends on the people (KC 13-2).

People and inhabitants should be aware of the value of the gardens, and they should fight against developers (AZ 11-2).

Traditional garden aesthetics are not well accepted by modern culture or modern aesthetic values. So, in many ways, the Japanese culture of old days need to be promoted more. It is not just a problem of the landscape, but it is more an issue of aesthetic sense which needs to be maintained and cultivated. Unless we show the younger generation the real value of Japanese aesthetics, it is very difficult to carry on for the future. You know, nobody cares anymore (NE 13-2).

4.3.7. Urban scheme of Tokyo

When the hypothetical discussion was examined, the majority of the experts did not directly agree with the proposition regarding the strong influence of Western urban designs on Tokyo's spatial design. Most of the experts emphasized that although the popular and exterior world of Tokyo seems to be following Western scheme, there is also a unique essence in the spatial design of Tokyo which reflects the core of Japanese. Among these discussions, an example given by AZ is considered interesting and ironically descriptive of the current situation. AZ associated the image of Tokyo with '*anpan*'; a Japanese sweet roll filled with red bean paste which is very typical to Japanese taste. However, the surrounding bread is learned from or inspired by the Western bakery.

When we started to import Western civilization, bread makers family invented very interesting bread. The inner part is Japanese sweet made by beans – anko – but the surrounding surface is the Western pan. It is called 'anpan.' So, keeping original, authentic element inside, we are now covered by the surface with western (AZ 20-8).

Maybe what you see in a landscape as a view, spatial Stockholm syndrome can be felt. But, there is something you cannot change at all; topography, water feature, roads. In Tokyo, there are many roads, streets that have never changed since the Edo period. From 1960-2000, there was economic growth and development for 40 years. It seemed like economic development destroyed the context of Tokyo, but there are many things that have never changed. Those bone elements will not change in the future as well. They are the frame of Tokyo. I think that those are the important elements to carry for future designs. (IC 20-3).

The spatial planning of Japan, especially Tokyo is very influenced by European or American style, but I think, there is an invisible Japanese influence in Tokyo. The surface is westernized, but the basic idea is very Japanese. Tokyo is a combination (LA 20-3).

After the Meiji period, Japanese learned about Western urban development styles, it is *true. But, to say more precisely, for example how to plan roads etc. in Tokyo Metropolitan City has not changed so much since the Edo period. What has changed is just the building itself. Buildings have changed according to the modern style similar to New York City. Other than building styles such as road planning or park planning, we did not take that much from Western culture. That is why I am not sure if we can call it as a spatial Stockholm syndrome. Moreover, the existence of the daimyo gardens Daimyo shows the traditional existence of Edo city*. (OR 20-3).

Looking at the surface, almost all the buildings are in modern Western or universal styles. But, the use of buildings or the sense of people is still pretty much Japanese. So, we are captured by Western cultures on the surface; but it is not the case for the core. The universal style may have influenced the city's image, but the situation here is not just an admiration for the Western culture. Tokyo is like a big disordered mix of different cultures, but it is based on Tokyo's geographical conditions and history. Therefore, I think it is too much to suppose that it is spatial Stockholm syndrome (DT 20-4).

4.4. Conclusion

In-depth discussions on the issue of the current situation of the daimyo gardens and the high-rise buildings' effects on the gardens' scenery with causes and possible solutions have presented meaningful results. Majority of the experts expressed that the surrounding buildings damage the gardens' in various ways. The experts emphasized the social value of the heritage gardens for today and future generations and strongly criticized the given economic value to the modern high-rise buildings that seem to threaten the cultural values. The importance of laws and regulations was stated repeatedly, as the experts thought there is an urgent need for effective restrictions for the construction of buildings at the surroundings of the gardens. Although it seemed to be impossible to change the current situation in the near future, the experts pointed out the fact that omitting the buildings from the gardens' sceneries can only be possible by a radical change in lifestyles in the future and by raising an awareness of the importance of the heritage gardens' values for the city and for the sustainability of the culture.

Evaluation of expert opinions in the qualitative method has provided important inputs in guiding the study. Especially the verbal stimulus of the major questionnaire was formed by the help of expert expressions. Besides, the interviews have significantly contributed to the determination of the study area by confirming the related literature. In this way, the study area was chosen in the context of more objective criteria, and the role of the researcher was limited in terms of ensuring the objectivity of quantitative research.

Some experts, indeed, made some detailed explanations for the term shakkei and the effects of the buildings. Among these, some experts indicated that even the sky could be considered as *shakkei*. In this way, important decisions were taken to guide the present study, and the emphasized expressions of the experts were decided to be directed to the public (garden visitors) with an attempt to examine the extent of expert judgments on the society.

CHAPTER 5.

AN EMPIRICAL STUDY ON THE EXPERIENCE OF PROSPECT-REFUGE THEORY IN HAMA-RIKYU GARDENS

5.1. Introduction

Developed by Jay Appleton (1975a), prospect-refuge theory has become one of the most well-known theories for explaining landscape preferences. A variety of empirical studies has been conducted to establish the relationship between prospect-refuge aspects and landscape preferences. Previous empirical studies were conducted in a variety of spatial settings such as in a campus setting (Nasar et al. 1983), in a natural recreational setting (Ruddell and Hammitt 1987), in a cultural landscape setting (Hagerhall 2000), in various scenic settings with various subjects, including children, by a set of experiments (Conrad 1993), in a waterfront urban park setting (Mumcu et al. 2010), and in Japanese Zen gardens to reveal the effect of enclosure on preferences (Inagami 2013; Inagami 2014).

As mentioned previously (see Chapter 2), Appleton (1975a) stated the possibility to find prospect and refuge aspects in Japanese gardens. However, he considered the prospect-related character of Japanese gardens only through the presence of an artificial mountain, while emphasizing their refuge-related aspects (Appleton 1975a; 1996). Accordingly, Inagami (2013; 2014) discussed the validity of prospect-refuge theory in Japanese gardens. However, his research mainly concentrated on the effect of the refuge aspect on the attractiveness of Japanese

Zen gardens. Nevertheless, the question of how prospect affects the aesthetic experience of Japanese gardens remains.

Based on the literature review and on-site observations, the present study has hypothesized that the daimyo gardens have the design features that may exhibit both prospect and refuge aspects. Being a unique feature compared to some other prototypes of Japanese gardens, the bright openness characteristic of these grand-scale gardens emphasizes the prospect aspect (opportunity to see). Furthermore, Stamps (2014) points out to the relationship between the borrowed scenery (*shakkei)* technique and prospect-refuge theory by stating "*..., we are captivated by vast expansive panoramas… because we can see so very much; the eye is 'drawn towards' edges of natural forms (Japanese borrowed scenery) ...*" With an agreement with Stamps (2014)'s observation, it is thought that the borrowed scenery technique which used to be embodied in the original design of the gardens fits the conditions of prospect-refuge theory by enabling the observer to see far distant landscapes without being seen. However, the surrounding high-rise buildings hinder the possible aesthetic experience of the gardens by obscuring the distant views.

5.1.1. Aim and Objectives

The overall scope of this study is to obtain user perceptions of and attitudes towards Hama-rikyu Gardens' visual aesthetic features in order to use them as an indicator for sustainable and participatory management. Based on the general scope, in this study, it is aimed to find evidence for prospect-refuge theory in Hama-rikyu Gardens in the context of visitor perception and attempted to examine the visual effect of the surrounding high-rise buildings on the aesthetic experiences of users. In accordance with these aims, this research has six objectives:

i. To identify general landscape preferences for the selected sites.
ii. To test prospect-refuge theory and determine its effects.
iii. To find evidence for the relation between the Shakkei (borrowed scenery) technique and prospect-refuge theory.
iv. To test the effect of socio-demographic characteristics of the observers on their perception of landscape preferences in accordance with prospect-refuge theory.
v. To identify the visual effect of the surrounding high-rise buildings on prospect- and refuge-related aspects.

By investigating the objectives listed, the overall aim was to test the validity of Appleton's prospect-refuge theory in a Japanese garden for the purpose of contributing to the related literature. Furthermore, by testing whether building intrusion affects users' landscape preferences and their perceptions of prospect-refuge aspects, this study attempts to reveal the effect of the high-rise buildings on the garden's landscape aesthetics.

5.2. Methodology

An in-situ survey was conducted to measure the visitors' experiences of prospect- and refuge-related features using a sample of both foreign and local visitors to Hama-rikyu Gardens. Eight sites in the garden were selected to be tested regarding the degree of openness, the degree of safety of the site, and the ratio of background buildings present.

5.2.1. The criteria for site selection

For the selection of the sites in the garden, the arrangement and configuration of the space were defined based on a classification offered by Nasar et al. (1983) and Conrad (1993) for experimental studies on prospect-refuge theory. Two bipolar spatial assessment scales were used to categorize the environments: an open-closed scale and a protected-unprotected scale. Based on this categorization, observation points from which broad, unobstructed views were available were chosen to provide the ‘open views’ associated with the prospect aspect. On the opposing end of the scale, ‘closed views’ were obstructed by some landscape elements. ‘Protected observation points’ associated with the refuge were chosen to be locations where the observer could partially hide from her/his surroundings. On the opposite end of the scale, ‘unprotected observation points’ were locations that lacked features with which individuals could hide from view.

Four conditions that had been used in a previous study (Nasar et al. 1983) were considered as a priori conditions: (1) an open view with an unprotected observation point; (2) a closed view with an unprotected observation point; (3) an open view with a protected observation point; and (4) a closed view with a protected observation point. Additionally, all of the sites were selected to have a view of water elements (ponds) in the garden since it is known that water elements profoundly influence the visitors’ affective appraisals and are preferred to other landscape elements (Kaplan and Kaplan 1989; Kaplan et al. 1998).

First, 35 sites on the main route in the garden were selected and photographed by a DSLR camera with an EF-S18-55 mm, f 3,5-5,6 lens. All the photos were shot with the widest angle possible and open focus (18 mm. focal length, the focus of the photos varies from f 6-8). The 35 sites were defined and split into the four categories above. To calculate the density of external high-rise buildings included in the scenery of each site, a vectoral drawing program (AutoCad 2017) was used. The borders of the buildings in each scene were drawn to achieve a closed shape, and the ratio of buildings to the entire scenery in the frame of each photograph was measured for each site (Appendix 2). Then, for each category, the average building density was calculated. The sites with higher ratios than the average were considered "high-level density" sites, while those with lower ratios than the average were considered "low-level density" sites. Lastly, for each category, two sites (one site with a high-level density and one site with a low-level density of buildings) were selected. As a result, eight sites (two for each condition) were selected for examination (Fig 5.1). Table 5.1 presents the sceneries of each selected observation point in the given categorization.

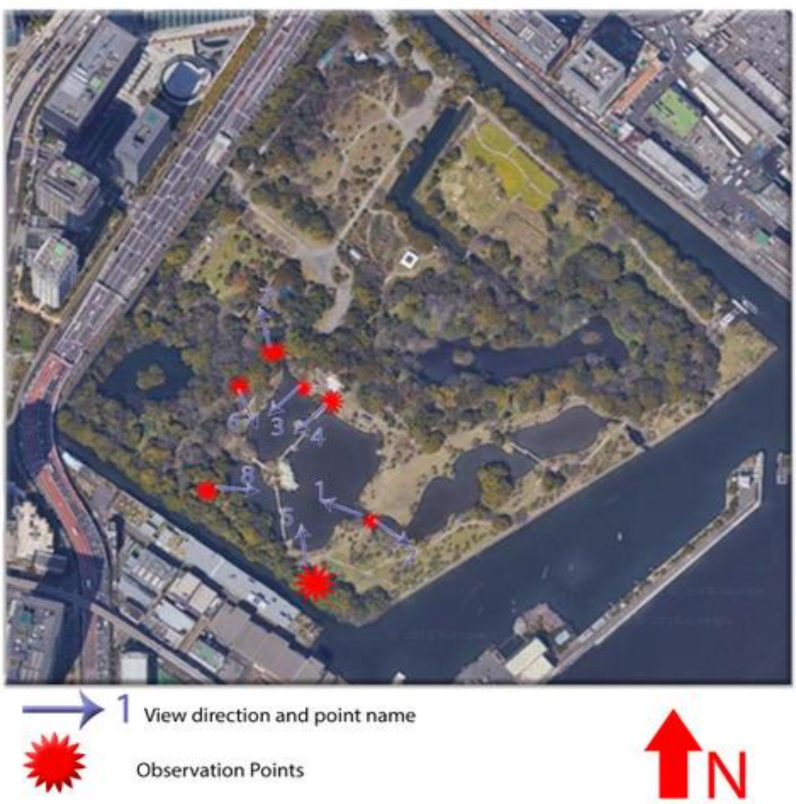


Fig. 5. 1. Selected sites on the garden plan (Google Maps 2017)

Table 5. 1. Observation points and their sceneries in categories

(1) Open view – Unprotected observation point		(2) Closed view – Unprotected observation point	
High-level Building Density	Low-level Building Density	High-level Building Density	Low-level Building Density
1. Nakanohashi Bridge-1	2. Nakanobashi Bridge-2	3. In front of Wisteria trellis part of Otsutaibashi Bridge	4. Next to Tsubame-no-ochaya teahouse
			
(3) Open view - Protected observation point		(4) Closed view- Protected observation point	
High-level Building Density	Low-level Building Density	High-level Building Density	Low-level Building Density
5. Mt. Fujimi	6. Mt. Hakkei	7. Sangenbashi Bridge	8. The forest surrounding Dai-sensui pond
			

To represent the first condition (an open view with an unprotected observation point), the observation point is a bridge (Nakanohashi) over a pond without features to hide an individual from the surroundings. This observation point provides an open view without any obstacles both to the north-west (1) and the south-east (2). For the second condition (a closed view in an unprotected site), the observation points were open spaces lacking landscape features with which to hide. The scenery of observation point-3 was obstructed by a Wisteria trellis, while a traditional structure (teahouse) served as the obstruction element for the scenery of observation point-4. The observation points for the third condition (an open view in a protected site) were both artificial hills providing a secure feeling with trees on the sides and behind. The tree branches stretched out above the observer but did not interfere with the view. From the top of Mt. Fujimi (5), one could see an overall view of the main pond, bridges, and teahouses.

Similarly, at the top of Mt. Hakkei (6), the view was open to scenery, which included the main pond, bridges, and teahouses. The observation points for the fourth condition (a closed view in a protected site) were chosen as locations where one could feel hidden due to the presence of dense trees and bushes on the sides and behind. The scenery of Sangenbashi Bridge (7) was obstructed by tree branches, and a high-rise building was located close by, which created an effect similar to the presence of a wall. The other observation point in the same condition (8) offered scenery that was obstructed by a small hill right in front of the standing point, as well as dense trees obstructing the view of the main pond and the other landscape elements. It should be noted that since Hama-rikyu Gardens is surrounded by high-rise buildings and these buildings are visible from almost every unobstructed observation point, the building density in the sceneries of the 'open views' are always higher than they are in the 'closed views.' As mentioned previously, the categorization of the building density (high level-low level) was determined for the sites representing each condition.

5.2.2. The questionnaire

In the questionnaire, a variety of statements to measure the perceived safety, openness and building influence were presented on a 5-point Likert scale ranging from 1 = 'not at all' to 5 = 'very much.' The questions asked in the questionnaire and the logic behind them are given in Table 5.2. The questionnaire form can be seen in Appendix 3.

Table 5. 2. Questionnaire items and logic behind them

I like the scene from this point	To obtain data about general landscape preference
The scene from this point is open/closed	To obtain data about perceived prospect
The point at which I stand is safe/unsafe	To obtain data about perceived refuge
The building in the background of the scene is disturbing/pleasant	To obtain data about the attitudes of respondents towards background buildings
Gender	To obtain data about respondents' socio-demographic background
Age	
Income	
Education	
Occupation	

5.2.3. Respondent Features

The sampling population for the survey was selected to be the visitors of Hama-rikyu Gardens. The selection of subjects was performed by using a purposeful quota sampling method. In light of this sampling method, 15 people per site was determined to be a sufficient sample size for statistical tests to be performed and was defined as the minimum quota for sampling. A total of 143 people were asked to participate in the survey, of whom 10% declined to participate. As a result, 129 visitors (between 15 and 18 per site) voluntarily took part in the study. Socio-demographic characteristics of the respondents can be seen in Table 5.3.

5.2.4. Procedure

Visitors who were passing by were asked if they would like to participate in the study. The interviewer handed the instruction sheet and the questionnaire to the participant and asked them to read the instructions. The participant filled out the questionnaire by standing at the specific point for each site and looking in the direction that was indicated by an arrow sign. The standing point and the sign indicating the viewing direction were printed on an A4 paper and placed in the area where the participant was asked to stand. Each participant was stopped, one at a time, at the observation points on a clear day of August (12.08.2017). Different people were questioned at each observation point.

5.2.5. Analyses conducted

A variety of statistical analyses were performed to reveal the relationships between the variables. Variance tests were conducted to measure the mean difference among the sites individually, among the sites regarding the categories (open, closed, protected, unprotected) and between shakkei and non-shakkei points, building ratio groups (high-level density, low-level density), gender and nationality. Regression analysis was performed to test all the variables for their influence on general landscape preferences. Finally, correlation analysis was employed to reveal the effect of high-rise buildings on landscape preferences and prospect-refuge aspects.

5.3. Results

Before proceeding to the visitors' landscape preferences, it would be in place to describe the socio-demographic background of the respondents. Table 5.3 presents the frequency distribution of respondents' socio-demographic background.

Table 5. 3. Socio-demographic background of the respondents

Gender	Female	Male				
N	59	70				
%	45.7	54.3				
Age	Under 23	23-40	41-60	61 and above		
N	20	65	38	6		
%	15.5	50.4	29.5	4.7		
Income	0$	1-4884$	4885-26638$	Above 26639$	Missing	
N	3	21	21	22	62	
%	2,3	16,3	16.3	17.1	48.1	
Education	Elementary	Junior-high school	High-school	Bachelor	Master	Ph.D.
N	1	5	23	79	16	5
%	0.8	3.9	17.8	61.2	12.4	3.9
Nationality	Japanese	Foreign				
N	65	64				
%	50.4	49.6				

The table shows that 46% (N=59) of respondents were female and 54% (N=70) was male. All the respondents indicated their actual age in the survey and the data was classified under four different age group. In the questionnaire, the income level was also asked. However, 48% of the respondents did not answer this question. The respondents who indicated their income (52%) was classified into four groups. The education level of the respondents was divided into six groups ranging from elementary school to Ph.D. Hama-rikyu Gardens' role as a tourist attraction in the center of Tokyo allowed this study to test the influence of cross-cultural attributes as well. Nationality was classified into two groups as Japanese (N=65) and foreigners (N=64). Additionally, the respondents were asked whether their occupation is related to a design discipline or not, and whether they have taken any classes about the natural environment in a graduate-level program or not. The data shows that 22% of the respondents' occupation was related to a design discipline and 12% of the respondents have taken classes about the natural environment.

5.3.1. Landscape preferences according to sites

Regarding landscape preferences (like/dislike the scenes), analysis results indicate no significant difference among the sites (F=1.971 df=7-121 p>0.05). Nevertheless, the highest preference is for Mt. Fujimi (4.2) which is followed by Mt. Hakkei (4.0), while Sangenbashi Bridge is the least liked one with the mean score of 3.12 (Table 5.4; Fig. 5.2).

Table 5. 4. Predefined and perceived values of the sites

	Predefined			Perceived				
Name of the site	Open/ Closed	Protected/ Unprotected	Building Ratio in Scene	Mean Score of Like	Closed/ Open	Unsafe /Safe	Building Disturbing/ Pleasant	N
1. Nakanohashi Bridge-1	O	UP	35.08%	3.94	3.31	4.31	3.12	16
2. Nakanohashi Bridge-2	O	UP	5.55%	3.94	4.00	4.31	2.93	16
3. In front of Wisteria trellis	C	UP	16.94%	3.86	3.60	4.33	3.40	15
4. Next to Tsubame-no-ochaya teahouse	C	UP	7.80%	3.71	3.23	4.23	2.76	17
5. Mt. Fujimi	O	P	14.54%	4.20	3.80	4.60	3.47	15
6. Mt. Hakkei	O	P	2.70%	4.00	4.00	4.44	3.11	18
7. Sangenbashi Bridge	C	P	3.45%	3.12	2.35	3.82	3.23	17
8. The forest surrounding Dai-sensui pond	C	P	0.39%	3.53	3.00	4.60	3.47	15
Total				3.78	3.41	4.33	3.17	129

C: closed; **O**: open; **UP:** unprotected; **P:** protected

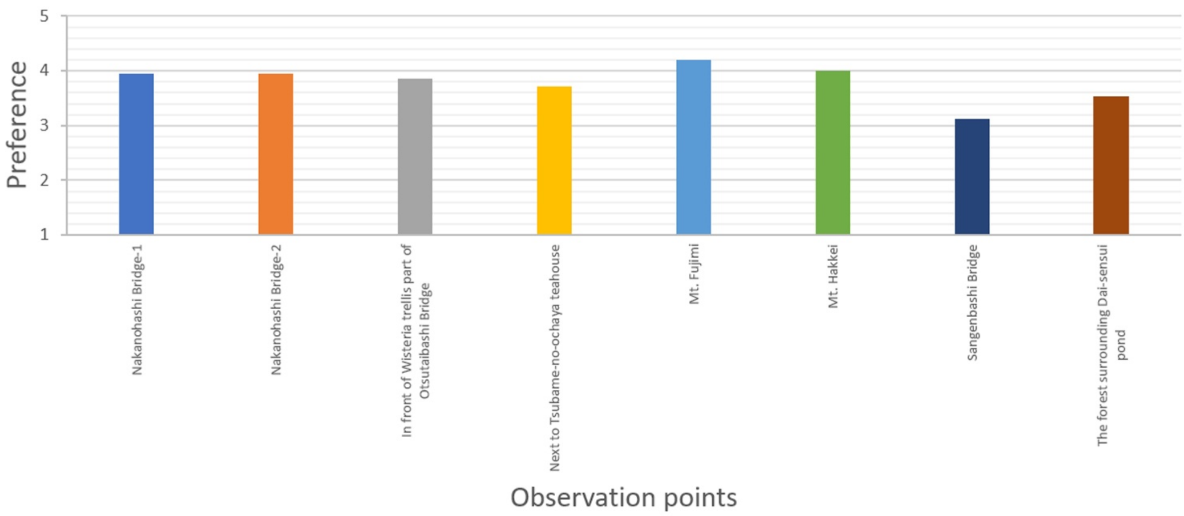


Fig. 5. 2. Landscape preferences for the sites

5.3.2. Effect of prospect-refuge aspects on landscape preferences

Results present no significant difference among the sites in regard to perceived safety in association with refuge related aspects ($F=0.166$, $df=1\text{-}127$, $p>0.5$). The mean safety value across all the sites is found to be 4.33. Perceived safety in all the sites are high regardless of the predefinitions (protected-unprotected), as the mean values of the sites predefined as protected (refuge) and unprotected (not refuge) are 4.35 and 4.30 respectively ($F=1.636$, $df=7\text{-}121$, $p>0.05$) (Table 5.4.). In this sense, all the sites can be labeled as refuge in the visitors' perception. Therefore, the examination of the refuge effect on landscape preferences cannot be done

Prospect-related aspects (openness/closedness), on the other hand, result in a significant difference in the visitors' perception ($F=18.030$, $df=1\text{-}127$, $p<0.001$). The mean openness value across all the sites is 3.41. The predefined open (prospect) views have a mean perceived openness value of 3.78, while the predefined closed (not prospect) views have a mean perceived openness score of 3.03. This statistically significant difference indicates the possible effect of prospect-related aspects of the garden on the landscape preferences The investigation on the differences in landscapes preferences according to perceived openness of the scenes, indeed, presents that the openness degree is a significant factor on landscape preferences ($F=4.604$, $df=4\text{-}124$, $p<0.005$), as the mean preference value for the open scenes (4.47) is significantly higher than the for the closed ones (2.67) (Table 5.4.).

For an investigation on the effect of balanced proportion of prospect-refuge aspects on landscape preferences, the predefined categories were taken in the analysis (Table 5.5.). The results present a significant difference among the categories ($F=3.979$, $df=3\text{-}125$, $p<0.05$). The highest landscape preference is observed in the open-protected (prospect-refuge balanced) sites (mean: 4.09), whereas the closed-protected ones have the lowest mean value among all the sites (3.31) (Fig. 5.3).

Table 5. 5. One-way ANOVA test results of landscape preferences for predefined sites

	Point Type	N	Mean	Std. Dev.	df	F	P
Landscape Preference	Open-unprotected	32	3.94^{a}	0.88	3-125	3.979	0.010
	Closed-unprotected	32	3.78^{ab}	1.18			
	Open-protected	33	4.09^{a}	0.80			
	Closed-protected	32	3.31^{b}	0.93			

$^{a\ ab}$ groups according to Tukey's test

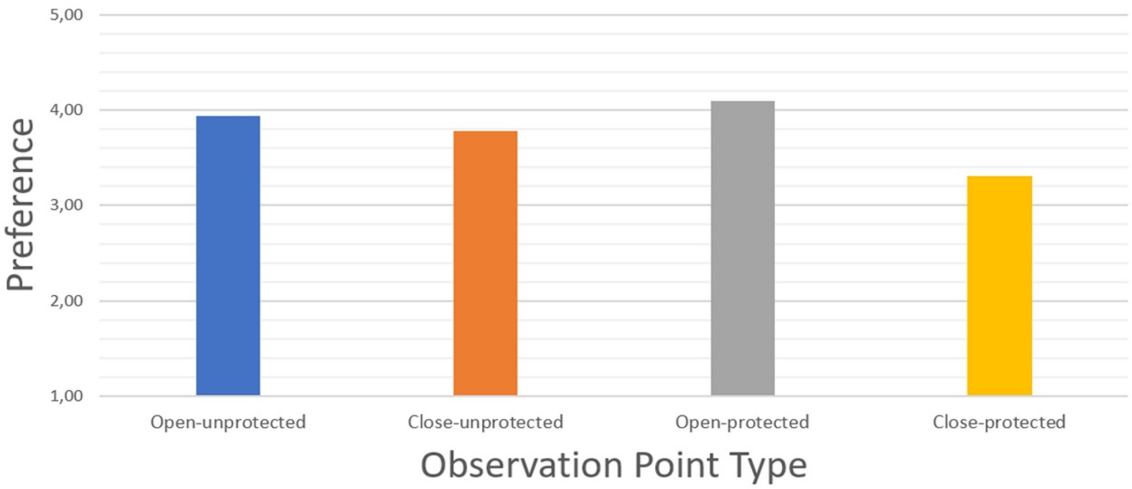


Fig. 5. 3. Landscape preferences for the predefined categories

5.3.3. Prospect-refuge and *shakkei*

As mentioned in previous chapters (see Chapter 2), the artificial hills in the garden used to enable the observer to see distant views which can be called borrowed sceneries. The two artificial hills among the selected sites in this study was Mt. Fujimi and Mt. Hakkei that offer a broad panorama of the garden. It is said that in the Edo period, Mt. Fujimi had a view of Mt. Fuji, Mt. Tsukuba, Edo Bay (Tokyo Bay) and the mountains of the Boso Peninsula. Mt. Hakkei was also an important point with background views that included the ocean and the mountains (TMGBCPD 2017). In light of this information, we can infer that these two artificial hills were sites from which the borrowed scenery technique could be experienced. In an attempt to identify landscape preferences and the perceived openness (prospect) and safety (refuge) of these two artificial hills in comparison to the other six sites, Mt. Fujimi and Mt. Hakkei were categorized together in a group under the name of ‘shakkei points’, while the other six sites were categorized in a group called ‘non-shakkei points.'

Comparison between the landscape preferences of the two aforementioned groups shows that ‘shakkei points’ with a mean value of 4.09 is significantly more preferred than the ‘non-shakkei points’ whose mean value is 3.68 ($F = 4.206$, $df = 1\text{-}127$, $p < 0.05$). Moreover, the perceived openness of the ‘shakkei points’ (3.91) is significantly higher than of the ‘non-shakkei points’ (3.24) ($F = 10.263$, $df = 1\text{-}127$, $p > 0.005$). Additionally, perceived safety on the ‘shakkei points’ (4.52) is higher than on the ‘non-shakkei points’ (4.26). However, this difference is not significant statistically ($F = 2.571$, $df = 1\text{-}127$, $p > 0.05$) (Fig. 5.4).

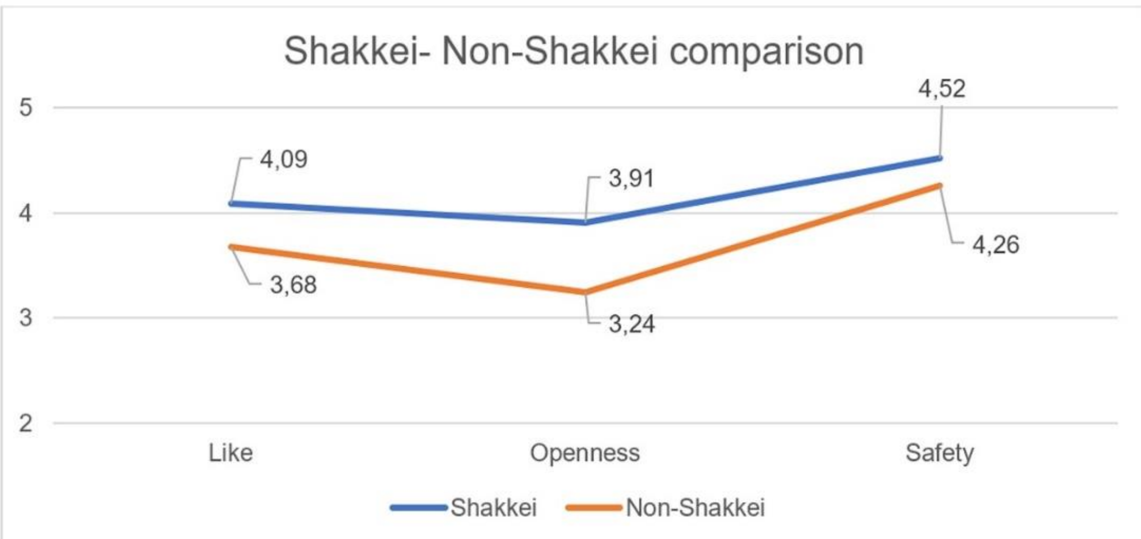


Fig. 5. 4. Landscape preference and prospect-refuge in the ‘shakkei’ and the ‘non-shakkei’ points

5.3.4. Gender and prospect-refuge

The examination for the effect of variables on the landscape preferences according to the predefined sites presents a significant difference between male and female respondents' preferences. Results show that the 'open-unprotected' sites have higher preference value among the female respondents (4.31) compared to the mean value derived from the male respondents' preferences (3.68) ($F=4.312$ $df=1\text{-}30$, $p<0.05$). Gender factor is not effective on the landscape preferences for the other predefined categories (open- protected: $F=2.328$, $df=1\text{-}31$, $p>0.05$; closed-protected: $F=0.066$, $df=1\text{-}30$ $p>0.05$, closed-unprotected: $F= 0.962$, $df=1\text{-}30$, $p>0.05$).

5.3.5. Effective variables on landscape preferences

Multiple linear regression analysis was performed to investigate effective variables on landscape preferences (Table 5.6). By taking the whole variables in the test, observation of their cumulative effect on the preferences was made possible.

Results indicate that landscape preferences are significantly affected by three variables which are the perceived openness/closedness of a site, the perceived disturbance from/pleasantness of the surrounding high-rise buildings, the nationality factor. The perceived openness of a site and perceived pleasantness of the surrounding high-rise buildings are positive indicators on landscape preferences, whereas the nationality factor has a negative coefficient in the regression equation. Independent variables explain 34.7% of the variance ($F=6.282$, $df= 10\text{-}118$, $p<0.001$).

Table 5. 6. Relationships between the variables and landscape preferences

Regression Model							
	Unstandardized Coefficients				Correlations		
Model	B	Std. Error	t	Sig.	Zero-order	Partial	Part
(Constant)	2. 742	0.668	4.104	0.000			
The scene is (open/closed) **	0.233	0.073	3.205	0.002**	0.342	0.283	0.238
The place where I stand is (safe/unsafe)	0.060	0.102	0.588	0.558	0.170	0.054	0.044
The buildings in the background of the scenery are (pleasant/disturbing) **	0.164	0.068	2.402	0.018**	0.246	0.216	0.179
Building ratio in the scene	0.009	0.007	1.273	0.205	0.128	0.116	0.095
Education on nature (nature class taken=1; not taken=0)	0.346	0.272	1.271	0.206	0.178	0.116	0.095
Occupation (designer=1; non-designer=0)	-0.251	0.188	-1.335	0.185	-0.145	-0.122	-0.099
Nationality (Japanese=1; foreign=0) **	-0.753	0.174	-4.326	0.000**	-0.438	-0.370	-0.322
Gender (female=1; male=0)	0.080	0.154	0.515	0.608	0.060	0.047	0.038
Education level	-0.088	0.112	-0.789	0.432	0.075	-0.072	-0.059
Age	0.002	0.006	0.351	0.726	-0.125	0.032	0.026
R=0.589; R^2=0.347; $F_{(10\text{-}118)}$=6.282; p<0.001							

5.3.6. Nationality and landscape preferences

For a detailed investigation of the nationality factor's effect on landscape preferences, a variance test was performed. Nationality was taken as a dependent variable and the dataset was split into two distinct subsets in which one of them contained Japanese respondents' preferences, while the other one contained foreign respondents' preferences (Japanese=1; foreign=0).

According to the results, foreign respondents' landscape preference (4.22) for the sites as a whole is significantly higher than Japanese respondents' (3.35) (F=30.095, df=1-127, p<0.001). Also, it is observed that foreign respondents' landscape preferences significantly differed according to the sites (F=3.297, df=7-56, $p \leq 0.005$), while this significance level was lower for Japanese respondents (F=2.545, df=7-57, p<0.05). Also, Japanese visitors preferred ‘shakkei points’ (3.68) to the ‘non-shakkei points’ (3.22), but the difference was not significant ($F=2.566$, $df=1-63$, $p>0.05$), whereas foreign visitors significantly preferred the ‘shakkei points’ (4.64) to the others (4.10) ($F=8.427$, $df=1-62$, $p\leq0.005$).

When the effect of the predefined categories of the sites on landscape preferences is investigated separately for Japanese and foreign participants, a dramatic difference can be observed between the two groups. According to the results of the analysis, foreign respondents significantly preferred the open-protected (prospect-refuge balanced) sites (4.64) the most and closed-protected sites (3.80) the least ($F=6.859$, $df=3-60$, $p<0.001$) which is a result consistent with the main dataset. However, this situation is found to be different for Japanese respondents, as they significantly preferred the open-unprotected observation points (3.87) the most and closed-protected observation points (2.88) the least ($F=4.009$, $df=3-61$, $p<0.05$).

Results also present a difference between Japanese and foreign participants’ landscape preferences in relation to the building ratio in the scenes. No correlation occurred in foreign respondents’ landscape preferences, and the building ratio in the scenes and the relationship between these two variables is negative ($r=-0.053$, $p>0.5$). On the other hand, Japanese respondent data shows a positive and significant correlation between building ratio and Japanese respondents’ landscape preferences ($r=0.257$, $p<0.05$).

5.3.7. Effect of the high-rise buildings on landscape preferences and prospect-refuge

Bivariate correlation tests were performed to examine the effect of high-rise buildings on landscape preferences and prospect- and refuge-related aspects (Table 5.7). The results show that building ratio in a scene does not have a significant correlation with landscape preferences ($r=0.128$, $p>0.05$), perceived openness (prospect) ($r=0.049$, $p>0.5$), and perceived safety (refuge) ($r=0.018$, $p>0.5$). Furthermore, there is no significant effect of building ratio categorization (high-level density/low-level density) on landscape preferences ($F=0.055$, df=1-127, $p>0.05$). Therefore, the results indicate that neither landscape preferences nor the perceived prospect-refuge attributes are affected by building ratio in a scene. Moreover, the results show no significant correlation between building ratio and the perceived disturbance from/pleasantness of the surrounding high-rise buildings ($r=0.010$ $p>0.5$).

Table 5. 7. Correlation results of selected variables

		Perceived open-closed	Perceived safe-unsafe	Building ratio in the scene	Disturbing-Pleasant
I liked the scene from this point	Correlation	0.342**	0.170	0.128	0.246**
	Sig.	0.000	0.054	0.149	0.005
Perceived open-closed	Correlation		0.172	0.049	0.121
	Sig.		0.051	0.584	0.174
Perceived safe-unsafe	Correlation			0.018	0.110
	Sig.			0.842	0.214
Building ratio in the scene	Correlation				0.010
	Sig.				0.914

On the other hand, according to Table 5.7, there is a positive correlation between perceived disturbance from/pleasantness of the surrounding high-rise buildings and landscape preferences ($r=0.246$, $p\leq0.005$). However, such a correlation does not occur with the variables of prospect-refuge (perceived disturbance/pleasantness with openness: $r=0.121$, $p>0.05$; perceived disturbance/pleasantness with safeness: $r=0.110$, $p>0.05$). Though this finding suggests that perceived pleasantness of/disturbance from the high-rise buildings may vary according to the physical characteristics of the sceneries, variance test shows no significant difference in the perceived pleasantness of/disturbance from the buildings across the sites ($F=0.816$, $df=7-121$, $p>0.5$).

5.4. Discussion

The results of this study emphasized the openness of a setting as an essential indicator for an aesthetic assessment of a landscape. This result is consistent with previous research findings (Nasar et al. 1983; Ruddell and Hammit 1987; Conrad 1993; Hagerhall 2000). Regarding the aesthetic experience of Japanese gardens in the context of prospect-refuge theory, in addition to the statement of Appleton (1975a), in which he indicated that Japanese gardens exhibit mainly refuge-related symbols, the results of this study demonstrated the validity of prospect-related symbols by indicating the openness degree of a view as the most important determinant of landscape preferences for all the questioned sites.

The results showed that predefined protected sites or the perceived safety level of a site did not significantly influence the landscape preferences. This result partly confirms the previous findings of Nasar et al. (1983), in which prospect was identified as the main indicator of preferences, whereas refuge exhibited a neutral effect. On the other hand, this result was inconsistent with the findings of Ruddell and Hammitt (1987), Conrad (1993) and Hagerhall (2000), all of whom found the refuge aspect of a landscape as an important determinant of preferences. The fact that all the selected sites were perceived as safe by the participants in the present study may be considered as an indicator of the strong refuge-related character of the garden, which supports Appleton (1975a)'s statement regarding Japanese gardens. However, this perception might be the result of proper management in the garden, as connections of management and concern for the environment with the feeling of safety have already been presented in previous studies conducted in different settings such as urban parks, built environments, and cultural landscapes (Taylor et al. 1985; Grahn 1991; Hagerhall 2000). This potential connection needs to be verified by further empirical studies with related variables.

When the predefined categories for the observation points were taken into account, the results showed evidence for the validity of prospect-refuge theory in Japanese gardens since the open (prospect) - protected (refuge) sites were the most preferred. This result naturally lends support to the conclusion that the scenes with the balanced prospect and refuge aspects are perceived as more aesthetic and are preferred. This finding is consistent with Conrad (1993), in which the author indicated that observation points with balanced prospect- and refuge-related features are preferable.

Results pointed out to the hypothesized relationship between the borrowed scenery (*shakkei*) technique and prospect-refuge theory in the garden's aesthetic experience. The fact that Mt. Fujimi and Mt. Hakkei were found to be the most preferred and perceived as possessing the most open views in this study supports the statement of Appleton (1975a) in which he indicated that artificial hills (referred to as ornamental mounts) are elements of Japanese gardens that enhance their prospect quality. These two points, additionally, were perceived as safer by the visitors compared to the other sites. In this sense, labeled as 'shakkei points,' Mt. Fujimi and Mt. Hakkei are two artificial hills where one can experience the aspects of prospect and refuge at the same time. From this point of view, it may be discussed that the borrowed scenery (*shakkei)* technique corresponds to the conditions of a balanced prospect-refuge experience. However, as mentioned previously, since the surrounding high-rise buildings obstruct the view of the garden, it is not possible to strongly emphasize the aesthetic experience of these sites (Mt. Fujimi and Mt. Hakkei) with regard to the shakkei technique. Here, it should be noted that the appealing nature of these two sites could result from the experience of an overall view from a high position in the landscape, which is sometimes referred to as the aesthetic experience of 'overview' and which is related to the prospect aspect (Hagerhall 2000). Therefore, a precise link between the Shakkei technique and prospect-refuge theory in this garden can be explored by further empirical studies with the usage of simulated views.

When the demographic characteristics of the participants were examined, contrary to the findings of Nasar et al. (1983), no significant difference was found between female and male participants regarding perceived safety of the sites. This result is consistent with Lothian (2017), in which gender was not a significant determinant of preferences in twelve reviewed studies out of sixteen. On the other hand, the results of this study showed that female participants preferred 'open-unprotected' observation points more than male participants did. This result contrasts with previous research findings (Nasar et al. 1983; Heerwagen and Orians 1993), which indicated that female visitors preferred 'enclosed and protected' places, while for male visitors, the opposite was true. When these scenes (points 1 and 2 in Figure 5.2) are examined to suggest a logical interpretation regardless of the background buildings, the scenes seem to offer a more natural feeling by being much closer to the water element in the garden. This finding may be explained by a higher prevalence of positive attitudes towards nature among women than men, which supports the findings of Strumse (1996). Furthermore, Woodcock (1982) found that women are more sensitive to a lack of coverage in clustered tree areas such as savannas. These points (open-unprotected) are similar to those Woodcock (1982) had described. Nevertheless, to explain why female participants in this survey preferred 'open-unprotected' scenes with more detailed evidence, further research with comprehensive variables should be conducted.

A number of studies examined the effect of familiarity on landscape preferences and had found that familiarity is influential in cross-cultural studies (Yang and Kaplan 1990; Kaplan and Herbert 1987; Hull and Reveli 1989; Nasar 1984). In this context, nationality, associated with being local, is considered an indicator of being familiar with the scene. Yang and Kaplan (1990) indicated that familiar environments were not necessarily favored. Furthermore, Nasar (1984) stated that it is likely that locals would have lower preferences for the landscapes than foreigners. In this study, regarding the nationality factor, the main data was split into two groups as 'Japanese' and 'foreign' to examine whether there was a difference between the preferences of Japanese participants and foreign participants which may be caused by 'familiarity.' The results supported Nasar's (1984) observation since it was found that Japanese participants exhibited significantly lower landscape preference ratings than the foreign participants. Additionally, the fact that foreign participants showed significantly different landscape preferences for the sites could be due to unfamiliarity. On the other hand, the results showed a strong and positive correlation between Japanese subjects' landscape preferences and the building ratio in the scenes. This result implies that a high density of buildings in a scene is more preferable for Japanese visitors than a low-density of buildings. In this sense, although previous research on the effect of high-rise buildings on traditional Japanese gardens has revealed a negative effect of the buildings (Shinji et al. 1989; Arifin and Masuda 1997; Koizumi and Ishikawa 2007; Shinobe 2012; Lin et al. 2017) with objectivist approach, the results of this survey, from a subjective-psychophysical approach, showed that Japanese visitors seem to prefer the views with high-rise buildings from inside the garden. This finding is thought to be a contradiction in terms of familiarity since it is highly likely that Japanese visitors, especially if they live in Tokyo, are familiar with scenes filled with high-rise buildings. This phenomenon could be interpreted as resulting from admiration for ‘modernism,’ which, as part of urbanism, has stemmed from Western influence on Tokyo. Considering the history of vertical growth in Tokyo, this phenomenon is a relatively new one in Japan (Perez 2014). In light of this, views with high-rise buildings may still be an unfamiliar phenomenon for many Japanese citizens, which may result in a feeling of admiration or excitement for the modernism and symbolic economic power of these buildings imposed by Western cultures. However, this result must be verified and discussed in further research, which should address the effect of high-rise buildings in the context of visitors’ aesthetic experiences with more comprehensive stimuli and additional respondents.

When the main dataset was analyzed with regard to the effect of the building ratio, neither landscape preferences nor the perceived prospect-refuge attributes were found to be affected by the building ratio. On the other hand, a significant correlation was observed between perceived pleasantness of/disturbance from the buildings and landscape preferences, which indicated that the landscape preferences of the participants who assessed the buildings as disturbing were lower compared to the landscape preferences of the participants who found the buildings pleasant. This situation will be further discussed in the next chapter.

5.5. Conclusion

This study was carried out to test prospect–refuge theory and the effect of external high-rise buildings on landscape preferences in a traditional Japanese *daimyo* (feudal lords) garden, namely, the Hama-rikyu Gardens located in Tokyo, Japan. Eight sites in the garden were selected to be tested with respect to their degree of openness, their degree of safety, and the ratio of background buildings present. An in-situ survey was conducted with 129 people (15–18 per site) who agreed to take part in the survey. Subjects were asked to assess the view at each site in the direction indicated by a sign and to provide responses about (a) their general preference for the view, (b) their perception of the openness of the view, (c) their perception of the safety of the site, (d) their perception of the pleasantness of/ disturbance from the background buildings. The results indicated that predefined open-protected sites were more preferred than the others; prospect (perceived openness) was an important indicator of the preferences, whereas the refuge-related symbols (perceived safety) of the garden were not perceived differently between the sites; the ratio of background buildings did not have a significant effect on either landscape preferences or perceived prospect–refuge attributes, whereas the perceived pleasantness of/disturbance from background buildings significantly affected the overall landscape preferences. The results indicated that the design techniques of Japanese daimyo gardens, including the usage of the *Shakkei* (borrowed scenery) technique, might reveal the principles of prospect–refuge theory. Furthermore, the effect of the surrounding buildings is considered to be a subjective aspect that depends on observers' experiences and attitudes, rather than an objective one.

This study is limited because it only addressed one type of Japanese garden. Prospect-refuge theory may be examined again in other Japanese gardens to define the effect of prospect and refuge attributes on landscape preferences. Additionally, as mentioned before, the stimuli of the study were limited to eight sceneries. Further research may approach the issue with more comprehensive stimuli and a more detailed categorization of them that considers all the landscape elements in a scene. Furthermore, to observe the differences between observation points and to discuss each observation point's prospect and refuge attributes effectively, it is highly recommended that further research should question the same people at each observation point.

CHAPTER 6.

PRELIMINARY SURVEY ON VISITORS' PERCEPTION OF HIGH-RISE BUILDING EFFECT ON HAMA-RIKYU GARDENS

6.1. Introduction

Previous studies on the high-rise buildings' intrusion into the heritage gardens emphasized the negative impact of the buildings. However, as mentioned before, laypersons' attitudes towards the contradictory sceneries of Tokyo's daimyo gardens, particularly for Hama-rikyu Gardens' scenery were found to be inconsistent with the results of previous studies (Shinji et al. 1989; Koizumi and Ishikawa 2007; Akasaka 2014). With an attempt to test if the high-rise building intrusion is a problem for the visitors' perception and experience, a preliminary questionnaire was conducted in Hama-rikyu Gardens to be a guiding light for the major questionnaire.

6.1.1. Aim and Objectives

This study aims to reveal the attitude of visitors towards surrounding high-rise building sceneries from inside Hama-rikyu Gardens by an in-situ survey. In accordance with this aim, the objectives of this study may be classified as:

i. To examine the attitudes towards external high-rise building views according to the physical attributes of the sites,
ii. To determine the effect of external high-rise building views on landscape preferences (to like/dislike the scene)
iii. To reveal the relationships (differences and correlations) between the variables about the external high-rise building views,
iv. To reveal the effect of the visitors' socio-demographic background on the attitudes towards external high-rise building views.

6.2. Methodology

The in-situ survey used the same protocols as it was shown in the previous chapter. The questionnaire which was conducted in this study was divided into two parts and applied simultaneously. Therefore, the study area, the criteria to select the sites, the respondents and the survey procedure are the same as the previous study (see Chapter 5). Differently, the present study will demonstrate the second part of the questionnaire in which it is aimed to assess visitor perceptions towards external high-rise building views.

6.2.1. Questionnaire

The questionnaire was prepared regarding the accentuated statements that were used by anonymous laypersons that were found on the internet search as well as by the aforementioned previous studies. Respondents rated each variable on a 5-point Likert scale. In the questionnaire, the first question -how much the subject liked the whole scene- was asked to embody predictors of building influence. This question was followed by a variety of statements to measure the perceived building influence (Appendix 3). It had participants rate the degree to which:

I liked the buildings in the background of the garden scene	(Not at all – Very much)
The buildings in the background of the garden scene are…	(Very disturbing – Very pleasant)
The buildings I see from this point should be lower in height	(Strongly disagree – Strongly agree)
The color of the buildings I see from this point should be changed	(Strongly disagree – Strongly agree)
I feel a deep contrast between the buildings in the background and the garden	(Strongly disagree – Strongly agree)
The buildings in the background of the scene are sublime elements	(Strongly disagree – Strongly agree)
The buildings in the background are an important part of the garden scenery	(Strongly disagree – Strongly agree)

Additionally, socio-demographic attributes (gender, age, income, nationality, education level, whether the occupation is related to design disciplines or not and if any graduate level classes about natural environmental studies were taken) were noted.

6.3. Results

Table 6.1 presents the frequency and mean values of the respondents' attitude towards the propositions about surrounding high-rise buildings. According to the table, results demonstrate that the majority of the respondents (32.6%) found the high-rise buildings fairly pleasant. On the other hand, the mean liking value of the high-rise buildings is quite low (2.95).

Although 31.8% of the respondents (N=41) have a neutral attitude towards the proposition of 'the buildings should be lower in height', the total number of respondents who agreed (N=28, 21.7%) and strongly agreed (N=28, 21.7%) with this proposition are the majority (N=56, 42.5%). On the other hand, the majority of the respondents (N=47, 36,4 %) disagreed with the proposition of 'the color of the background buildings should be changed.' The majority (N=56, 43.4%-agree; N=33, 25. 6%-strongly agree) agreed with the proposition of 'I feel a deep contrast between the buildings and the garden.' Most of the respondents (36.4%) had a neutral attitude towards the proposition of 'the background buildings are the sublime element.' Lastly, the majority (N=48, 37.2%) agreed that 'the background buildings are an important part of the garden scenery.'

Table 6. 1. Frequency and mean values of the general attitude towards the surrounding buildings

		Very Dis.	Fairly Dis.	Neutral	Fairly Plea.	Very Plea.	Mean
The buildings in the background of the garden scene are	N	10	27	36	42	14	3.18
	%	7.8	20.9	27.9	32.6	10.9	
		Not at all	A little	Somewhat	Quite a bit	Very Much	Mean
I like the buildings in the background of the garden scene	N	17	34	34	27	17	2.95
	%	13.2	26.4	26.4	20.9	13.2	
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
The buildings I see from this point in the background should be lower in height	N	8	24	41	28	28	3.34
	%	6.2	18.6	31.8	21.7	21.7	
The color of the buildings I see from this point in the background should be changed	N	9	47	41	19	13	2.84
	%	7.0	36.4	31.8	14.7	10.1	
I feel a deep contrast between the buildings in the background and the garden	N	1	15	24	56	33	3.81
	%	0.8	11.6	18.6	43.4	25.6	
The buildings in the background of the scene are the sublime element	N	14	23	47	40	5	2.99
	%	10.9	17.8	36.4	31.0	3.9	
The buildings in the background are an important part of the garden scenery	N	17	25	25	48	14	3.13
	%	13.2	19.4	19.4	37.2	10.9	

6.3.1. Attitudes towards high-rise buildings according to the sites

Firstly, the relationships between the variables about high-rise buildings and the physical attributes of the sites were analyzed. As mentioned previously in the method section, there were eight different sites in which visitor inputs were gained (see Chapter 5; section 5.2). The results show that perceived pleasantness/disturbance from the surrounding buildings ($F= 0.816$, $df=7\text{-}121$, $p>0.5$) or to like/dislike the buildings ($F=0.628$, $df=7\text{-}121$, $p>0.5$) is not related to the attributes of the sites. The only proposition which differs according to the sites is 'I feel a deep contrast between the garden and background buildings' ($F=2.110$, $df=7\text{-}121$, $p<0.05$). The feeling of contrast is felt the highest in 'Nakanobashi Bridge-2' (4.38), while the lowest level of contrast is felt in the point named 'the forest area surrounding Dai-sensui' (3.33). Besides, the rate of the same proposition (I feel a deep contrast between the garden and background buildings) significantly differs according to the observation point categories (open, closed, protected, unprotected). Results present that contrast is felt significantly more in open views (4.03) than in the closed ones (3.59) ($F=6.779$, $df=1\text{-}127$, $p\leq0.01$), and contrast is felt significantly more in unprotected points (4.03) than in the protected points (3.6) ($F=6.592$, $df=1\text{-}127$, $p<0.05$).

When the correlation between the propositions and the measured building ratio is investigated, results show that no variable is significantly correlated with building ratio (perceived disturbance/pleasantness $r=0.010$ $p>0.5$; liking degree of the background buildings $r=0.050$ $p>0.5$; buildings should be lower in height $r=0.019$ $p>0.5$; color should change $r=-0.040$ $p>0.5$, contrast $r=0.160$ $p>0.05$, sublime element $r=0.092$ $p>0.1$; important part of the scenery $r=0.097$ $p>0.1$).

6.3.2. Effect of the high-rise buildings on landscape preferences

As it was demonstrated in the previous chapter, bivariate correlation test results demonstrated that there was no significant correlation between building ratio and landscape preferences (to like/dislike the scenery) ($r=0.128$ $p>0.05$). On the other hand, there was a significant correlation between perceived pleasantness/disturbance from the buildings and landscape preferences ($r=0.246$ $p\leq 0.005$) (Table 6.2). This result refers to the fact that the respondents who assessed the buildings as pleasant liked the whole scene more compared to the respondents who assessed the buildings as disturbing.

In addition to the previous results, the variable which is 'I feel a deep contrast between the garden and the buildings' is found to be having a significant correlation with landscape preferences ($r=0.217$ $p<0.05$) (Table 6.2). This finding suggests that if one feels a deep contrast between the garden and the buildings, his/her landscape preference gains higher value compared to the one who does not feel any contrast. Apart from the aforementioned two variables, there is no other significantly correlated variable with landscape preferences (to like/dislike the buildings $r=0.162$ $p>0.05$; buildings should be lower in height $r=-0.029$ $p>0.5$; color of the buildings should be changed $r=-0.148$ $p>0.05$; buildings are sublime element $r=0.066$ $p>0.05$; buildings are an important part of the scenery $r=0.139$ $p>0.05$).

Table 6. 2. Correlations with landscape preference

		The buildings in the background of the garden scene are (disturbing – pleasant)	I like the buildings in the background of the garden scene	The buildings I see from this point in the background should be lower in height	The color of the buildings I see from this point in the background should be changed	I feel a deep contrast between the buildings in the background and the garden	The buildings in the background of the scene are the sublime element	The buildings in the background are an important part of the garden scenery
I liked the scene from this point	Pearson Correlation	.246**	.162	-.029	-.148	.217*	.066	.139
	Sig. (2-tailed)	.005	.067	.740	.095	.014	.455	.118

6.3.3. Variance among the propositions and landscape preferences

In order to investigate the differences among variables, variance analysis was performed. Results indicate no significant difference between perceived pleasantness of/disturbance from the high-rise buildings (3.18) and the liking degree of the high-rise buildings (2.95) ($F=2.498$, $df=1-256$, $p>0.1$). On the other hand, a significant inconsistency is observed between landscape preferences (the liking degree of the scenes) (3.78) and the liking degree of the high-rise buildings (2.95) ($F=35.882$, $df=1-256$, $p<0.001$). The significant difference between the mean values of these two variables shows that landscape preferences have significantly higher mean value compared to the liking degree of the high-rise buildings. This result implies that while respondents like the sceneries as a whole, they disliked the buildings in the background of those sceneries.

In the investigation of the variance between the landscape preferences and the liking degree of the surrounding high-rise buildings for each observation point separately, results present a significance in five observation points out of eight (Nakanohashi Bridge-1 – landscape preference: 3.94, liking degree of the buildings: 3.12, $F=4.847$ $df=1-30$ $p<0.05$. Nakanohashi Bridge-2 - landscape preference: 3,94; liking degree of the buildings: 2.56, $F=11.672$ $df=1-30$ $p<0.005$. Mt. Fujimi - landscape preference: 4.2, liking degree of the buildings: 2.87, $F=18.543$ $df=1-28$ $p<0.001$. Mt. Hakkei – landscape preference: 4.0, liking degree of the buildings: 2.83, $F=8.248$ $df=1-34$ $p<0.01$. Next to Tsubame-no-ochaya teahouse – landscape preference: 3.71, liking degree of the buildings: 2.71, $F=4.313$ $df=1-32$ $p<0.05$).

Results also indicate a significant difference between landscape preferences (3.78) and perceived pleasantness of/disturbance from buildings (3.18) ($F=21.047df=1-256$ $p<0.001$). Once again, the same five points present a significant variance (Nakanohashi-1 – landscape preference: 3.94, pleasantness/disturbance of the buildings: 3.12, $F=5.163$ $df=1-30$ $p<0.05$. Nakanohashi Bridge-2 -

landscape preference: 3.94, pleasantness/disturbance of the buildings: 2.94, $F=6.690$ $df=1\text{-}30$ $p<0.05$. Mt. Fujimi - landscape preference: 4.2, pleasantness/disturbance of the buildings: 3.47, $F=4.680$ $df=1\text{-}28$ $p<0.05$. Mt. Hakkei – landscape preference: 4.0, pleasantness/disturbance of the buildings: 3.11, $F=6.078$ $df=1\text{-}34$ $p<0.05$. Next to Tsubame-no-ochaya teahouse – landscape preference: 3.71, pleasantness/disturbance of the buildings: 2.76, $F=4.258$ $df=1\text{-}32$ $p<0.05$).

The variances for both conditions (variance between landscape preferences and liking degree of the buildings; variance between landscape preferences and pleasantness/disturbance of the buildings) have the highest values in the observation points namely Mt. Fujimi and Mt. Hakkei which are both artificial hills in the garden.

6.3.4. Attitudes towards high-rise building according to the socio-demographic background

Correlation analysis was performed to reveal the relationships between socio-demographic variables and the propositions about the surrounding buildings (Table 6.3). According to the analysis results, socio-demographic variables have significant effects on different propositions.

Table 6.3 presents that education level is a significant independent variable on perceived pleasantness of/disturbance from the high-rise buildings ($r=0.184$, $p<0.05$). The result indicates that the respondents who have the highest education level assessed the high-rise buildings as being more pleasant compared to the assessment of the respondents who have a lower level of education.

Gender is a significant variable on the proposition of 'In the future, the buildings I see from this point in the background should be lower in height' ($r=-0.182$, $p<0.05$. female=1, male=2). According to the result, female respondents have a higher agreement on this proposition compared to the male respondents.

Table 6. 3. Correlations between socio-demographic variables and propositions

		Gender	Age	Income	Education	Nationality	Occupation	Nature class
The buildings in the background of garden scene are (Very disturbing-Very pleasing)	Pear. Cor.	-0.021	0.045	-0.085	0.184*	0.064	-0.053	0.050
	Sig.	0.816	0.613	0.492	0.037	0.473	0.553	0.571
I like the buildings in the background of the garden scene	Pear. Cor.	0.111	-0.132	-0.020	0.065	0.081	-0.127	0.114
	Sig.	0.211	0.136	0.871	0.467	0.360	0.152	0.199
The buildings I see from this point in the background should be lower in height	Pear. Cor.	-0.182*	0.067	0.023	-0.092	-0.155	0.080	-0.023
	Sig.	0.039	0.451	0.852	0.299	0.080	0.367	0.798
The color of the buildings I see from this point in the background should be changed	Pear. Cor.	-0.060	0.124	0.262*	-0.127	-0.159	0.026	-0.127
	Sig.	0.502	0.161	0.032	0.152	0.072	0.773	0.152
I feel a deep contrast between the buildings in the background and the garden	Pear. Cor.	-0.048	-0.103	-0.046	-0.047	0.254**	-0.050	0.119
	Sig.	0.591	0.243	0.710	0.595	0.004	0.575	0.178
The buildings in the background of the scene are sublime element	Pear. Cor.	0.038	-0.217*	-0.050	-0.037	0.067	0.004	0.073
	Sig.	0.668	0.014	0.687	0.677	0.450	0.964	0.414
The buildings in the background are an important part of the garden scenery	Pear. Cor.	0.073	-0.203*	-0.047	0.064	0.121	-0.028	0.079
	Sig.	0.410	0.021	0.706	0.472	0.173	0.757	0.372

**. Cor. is significant at the 0.01 level (2-tailed).
*. Cor. is significant at the 0.05 level (2-tailed).

Income level is a significant variable on the proposition of “In the future, the color of the buildings I see from this point in the background should be changed” ($r=0.262$ $p<0.05$). Based on this finding, it is seen that the respondents who have a higher income level have a higher agreement on this proposition.

Nationality variable significantly correlates with the proposition of “I feel a deep contrast between the buildings in the background and the garden” ($r=0.254$ $p<0.005$, Japanese=1, foreign= 2). The result suggests that the foreign respondents feel significantly more contrast between the garden and the high-rise buildings than the Japanese respondents do.

Age is a significant factor on two propositions which are “The buildings in the background of the scene are a sublime element” ($r=-0.217$ $p<0.05$) and “The buildings in the background are an important part of the garden scenery” ($r=-0.203$ $p<0.05$). The older respondents show a significantly higher disagreement with both statements.

6.3.5. The variables related to the liking degree of the high-rise buildings

An intriguing finding of the correlation test above is that the none of the socio-demographic variables have a significant effect on the liking degree of the high-rise buildings (Gender: r=0.111 p>0.05, Age: r=-0.132 p>0.05, Income: r=-0.020 p>0.5, Education: r=0.065 p>0.05, Nationality: r=0.081 p>0.05) (Table 6.3). With an attempt to reveal the variables that are significantly effective on the liking degree of the high-rise buildings, a linear multiple regression analysis was carried out (Table 6.4).

Table 6. 4. Multiple regression analyses on the liking degree of the buildings

Regression Model							
	Unstandardized Coefficients				Correlations		
Model	B	Std. Error	t	Sig.	Zero-order	Partial	Part
(Constant)	0.967	1.456	0.664	0.509			
Gender (Dummy variate Female=1)	0.153	0.270	0.567	0.573	-,0067	0.077	0.052
Age	0.001	0.012	0.125	0.901	-0.161	0.017	0.012
Income	1.794	0.000	0.347	0.730	-0.020	0.047	0.032
Education	0.210	0.199	1.057	0.295	0.176	0.142	0.098
Nationality (Dummy variate Japanese=1)	0.121	0.334	0.363	0.718	0.008	0.049	0.034
Occupation (Dummy variate Designer=1)	-0.497	0.309	-1.609	0.114	-0.091	-0.214	-0.149
Nature class (Dummy variate Nature Class taken=1)	0.441	0.442	0.997	0.323	0.205	0.134	0.092
The buildings I see from this point in the background should be lower in height	-0.237	0.139	-1.703	0.094	-0.513	-0.226	-0.157
In the future, the color of the buildings I see from this point in the background should be changed	0.053	0.127	0.420	0.676	-0.351	0.057	0.039
I feel a deep contrast between the buildings in the background and the garden	-0.149	0.134	-1.110	0.272	-0.112	-0.149	-0.103
The buildings in the background of the scene are the sublime element	0.409	0.148	2,760	0.008**	0.580	0.352	0.255
The buildings in the background are an important part of the garden scenery	0.291	0.121	2,412	0.019*	0.591	0.312	0.223

$R=0.734$; $R^2=0.539$ $F_{(12\text{-}54)}=5.260$ $p<0.001$

In this analysis, the propositions about the background buildings and socio-demographic variables (gender (female=1, male=0), age, education level, nationality (Japanese=1, foreign=0), whether the occupation is related to design disciplines or not (designer=1, non-designer=0), if any graduate level classes about natural environmental studies were taken (if taken=1, if not taken=0) were examined.

According to the results (Table 6.4), two variables are found to be significantly and positively effective on the liking degree of the high-rise buildings. These are the propositions of ‘background buildings are a sublime element,’ and ‘background buildings are an important part of the garden scenery’. Independent variables explain 53.9% of the variance on liking degree of the high-rise buildings ($F=5.260$, $df= 12-54$, $p<0.001$). The level of agreement on these propositions are positive indicators of the dependent variable (liking degree of the buildings). No other variable is significantly effective on the liking degree of the surrounding buildings.

6.3.6. The variables related to the perceived pleasantness of/disturbance from the high-rise buildings

Another linear multiple regression analysis was performed by taking perceived pleasantness of/disturbance from the high-rise buildings as a dependent variable (Table 6.5). The other variables were taken as independent variables.

The results indicate that there are two significantly effective variables on perceived pleasantness of/disturbance from the high-rise buildings which are propositions of ‘I feel a deep contrast between the buildings in the background and the garden’ and ‘The buildings in the background are an important part of the garden scenery.’ Independent variables explain 47.3% of the variance on perceived pleasantness of/disturbance from the background buildings ($F=4.039$, $df= 12-54$, $p<0.001$). The level of agreement on “I feel a deep contrast between the buildings in the background and the garden” is a negative indicator of perceived pleasantness of /disturbance from the buildings, while “The buildings in the background are an important part of the garden scenery” is a positive indicator.

Table 6. 5. Multiple regression analyses on perceived pleasantness/disturbance from the buildings

Regression Model							
	Unstandardized Coefficients				Correlations		
Model	B	Std. Error	t	Sig.	Zero-order	Partial	Part
(Constant)	2.097	1.331	1.575	0.121			
Gender (Dummy variate Female=1)	0.210	0.247	0.848	0.400	0.005	0.115	0.084
Age	0.013	0.011	1.184	0.242	-0.052	0.159	0.117
Income	-1.510	0.000	-0.319	0.751	-0.085	-0.043	-0.032
Education	0.159	0.182	0.875	0.385	0.190	0.118	0.086
Nationality (Dummy variate Japanese=1)	-0.095	0.305	-0.311	0.757	0.002	-0.042	-0.031
Occupation (Dummy variate Designer=1)	-0.311	0.282	-1.100	0.276	-0.052	-0.148	-0.109
Nature class (Dummy variate taken Nature Class=1)	0.163	0.404	0.404	0.688	0.153	0.055	0.040
The buildings I see from this point in the background should be lower in height	-0.114	0.127	-0.897	0.374	-0.378	-0.121	-0.089
The color of the buildings I see from this point in the background should be changed	0.033	0.116	0.284	0.778	-0.344	0.039	0.028
I feel a deep contrast between the buildings in the background and the garden	-0.375	0.123	-3.055	0.003**	-0.326	-0.384	-0.302
The buildings in the background of the scene are sublime element	0.225	0.136	1.660	0.103	0.435	0.220	0.164
The buildings in the background are an important part of the garden scenery	0.320	0.110	2.902	0.005**	0.523	0.367	0.287
$R=0.688$; $R^2=0.473$; $F_{(12\text{-}54)}=4.039$ $p<0.001$							

6.4. Discussion

Analysis results demonstrated that landscape preferences in the garden (to like/dislike the scenery) had significant relationships with two variables. One of them was the perceived pleasantness of/disturbance from the buildings. This finding suggests that the subjective characteristics of observers may have a greater influence on their perception of the high-rise building views. As the perceived pleasantness of/disturbance from the buildings was not correlated with any prospect-and refuge-related aspects in the scenes and was free from the effect of building ratio, it can be concluded that perceived pleasantness of/disturbance from the buildings is independent of the objective attributes of the scene and is related to the personal characteristics and experiences of the observer. However, in the extent of this study's sampling, to investigate the relationship between respondents' socio-demographic backgrounds and perceived pleasantness of/disturbance from the buildings was not possible, as there was no significant correlation.

The other variable which was correlated with landscape preferences was 'to feel a deep contrast between the garden and the background buildings.' This finding indicated that the feeling of contrast affects the preference for a scene positively. Regarding this finding alone, this correlation could point out to the fact that visitors enjoy the sceneries which have a combination of traditional garden elements and modern urbanism. However, findings revealed that the feeling of contrast was significantly related to the physical qualities of the observation points/scenes. It was seen that this feeling was higher in the predefined open views and unprotected observation points compared to the closed views and protected observation points. Given that these points offer open sceneries with a wide panorama (open view) and that there is no obstacle in front of or around them (unprotected observation point), the observer encounters with scenery in which both the garden and the buildings can be seen together without any obstacle. In this sense, the positive relationship between the feeling of contrast and landscape preferences can be interpreted in a way that the combination of modern and traditional is pleasurable. On the other hand, it has been revealed by some empirical research that openness (prospect) of a landscape setting is an effective indicator for landscape preferences and the points which offer open views are preferable (Nasar et al. 1983; Ruddell and Hammitt 1987; Conrad 1993; Hagerhall 2000). In this case, to explain the correlation between the feeling of contrast and landscape preferences as an appreciation to the combination of modern and traditional can be insufficient since this relationship can be the reflection of prospect's strong effect on landscape preferences. Therefore, the observers might like the scenery because of its openness but might feel a contrast between the garden and the buildings at the same observation point due to the openness factor of the view. Additionally, the feeling of contrast was found not to be affected by the ratio of buildings in a scene. This situation may be explained in a way that whatever the ratio of the buildings is, when the buildings enter the garden scenery, a sense of contrast occurs. Besides, the components that cause a feeling of contrast can be related to the characteristics of the buildings other than the ratio in a scene.

As an evidence of the negative effect of high-rise buildings on the garden scenery, the regression analysis showed that there was an inverse proportion between the feeling of contrast and perceived pleasantness of/disturbance from the buildings. This result implies that the feeling of contrast increases when the perceived disturbance from the buildings is high. This situation points out that the feeling of contrast occurs in a negative state of mind due to the disturbance of the buildings. Thus, this finding reinforces the likelihood that the positive correlation between the feeling of contrast and landscape preferences may be explained by the effect of prospect on landscape preferences.

The negative effect of the external buildings became clearer with the results of the variance tests which showed the significant difference between the mean scores of the liking degree of the scenes and the mean scores of the liking degree of the buildings as well as the perceived pleasantness/disturbance from the buildings. This finding explains that the scenery of the garden is appreciated highly as a whole. On the other hand, the external buildings which enter those sceneries are not liked and are found to be disturbing. When this difference investigated for each observation point, the most significant difference between the mean scores of liking degree of the buildings and landscape preferences, as well as between perceived pleasantness of/disturbance from the buildings and landscape preferences was found to be in the observation points namely Mt. Fujimi and Mt. Hakkei which are both artificial hills in the garden. As may be recalled, these two points (labeled as *shakkei points*) were the most appreciated ones among all sites (see Chapter 5; Table 5.4). On the other hand, results indicated that the buildings which enter the sceneries of these points were not appreciated and even found to be more disturbing comparing to the other points. Thus, this condition may be a sign of the negative impact of the high-rise buildings on *shakkei* technique and destruction in the garden's scenery as some authors (Shinji et al. 1989; Koizumi and Ishikawa 2007; Akasaka 2014; Shinji 2015) indicated. Furthermore, this situation may imply that the sceneries which have been filled with high-rise building failed to satisfy the expectations of observers who possibly wanted to have unspoiled views without buildings. However, the interpretation of this finding should be verified by a future experiment which may use simulations with a controlled view change.

Another important finding of this research was that the liking degree of the background buildings was not significantly related to the physical qualities of the sites (i.e., observation point categories and building ratio in a scene). Furthermore, there was no significant difference between the liking degree of the buildings and perceived pleasantness/disturbance from them. It is also noteworthy that, according to the regression analysis, the liking degree of the buildings was affected by only two variables (the buildings are an important part of the scenery, the buildings are the sublime element). All the results above point out to the fact that the liking degree of the buildings may be free from the objective characteristics of the space but mainly decided by the subjective characteristics of the observers.

When the effect of socio-demographic variables on the attitudes towards the buildings is examined, meaningful relationships can be conceived of striking results. For instance, the results showed that as the education level increased, the buildings were not perceived as disturbing and even found to be pleasing a little. This finding may be interpreted as the fact that high education level leads to a more tolerant view towards the conditions of modern society and urbanism. Therefore, those who hold a higher level of education may have a tendency of having positive appraisals towards the skyline of Tokyo metropolitan which can be the symbol of modern life. By selecting proper data samples and comprehensive attitude scales, further research in this regard may investigate this hypothesis and reveal its effective variables.

Another finding on the effect of socio-demographic attributes was that the female respondents significantly wanted the background buildings to be lower when it was compared with the attitude of the male respondents who were more neutral. However, to reveal the explanatory relationships of this finding could not be possible due to the insufficient data collection instruments. Thus, this attitude of the females should be investigated and explained with related reasons by conducting future exploratory surveys.

The results showed that the respondents with high-level income showed significant demand for a change in buildings' colors. On the other hand, considering that there was no meaningful relationship between the income and the proposition of 'the background buildings should be lower', the respondents who have high-income – perhaps with the Pollyanna effect- actually liked the buildings as they are, but thought that it could be good if their colors were changed. However, the fact that the majority of the respondents disagreed with the proposition of the color change shows that the regulations about the exterior building colors which is decided by Tokyo Metropolitan Landscape Plan (TMGBCPD 2017) are effective in terms of obtaining a harmony.

One of the interesting findings of this study was that the foreign respondents had a significantly greater agreement with the proposition of 'I feel a deep contrast between the garden and the background buildings' than the Japanese respondents did. This situation may be a sign of the familiarity of Japanese respondents with the scenery so that they considered it a part of everyday life while foreign respondents found the same scenery odd.

The results showed that younger respondents perceived the buildings as an important part of the garden scenery and as a sublime element. In this regard, it can be deduced that the older age groups have a more negative view towards the buildings since they showed a significant disagreement on these statements. This finding was consistent with the research results of Arifin and Masuda (1998) in which they found that the visitors above 20 years of age had a stronger desire for conservation action in a traditional garden while those under 20 years of age showed minimal awareness of the visual problems caused by surrounding buildings. However, more extensive studies can bring out supportive results or reject this finding.

6.5. Conclusion

The results of this study pointed out some important phenomena about the negative effect of high-rise buildings in the observers' perception. The findings of the variance test were striking in terms of indicating that the observers appreciate the garden scenery while they do not like the buildings which enter those sceneries. This finding reveals that the interior scenes of the garden maintain its visual quality in the perception of observers. However, when it is thought that the background elements and distant landscapes should also be considered as a part of this traditional garden, the buildings at the background damage its overall scenery. Looking at the significant difference between the liking degree of the overall scenery and the liking degree of the buildings, the findings imply that the loss of *shakkei* affects the garden's scenery negatively in observers' perception, as the analysis results indicated that the highest difference between the landscape preferences and the liking degree of the high-rise buildings was found in the assessment of two artificial hills which were labeled as 'shakkei points.'

Another important finding of the study was that the feeling of contrast between the garden and the buildings was in significant correlation with the variables of perceived pleasantness of/disturbance from the buildings and the liking degree of the buildings. This finding implies that the feeling of contrast may be attractive at first glance, but as the feeling of contrast increases, the level of perceived disturbance from the buildings increases as well. Furthermore, the majority of the respondents agreed with the proposition of 'the buildings should be lower in height.' These findings once again reveal that the conspicuousness of the external buildings affects the visual quality of the garden's scenery negatively. Based on this, there may be a collective demand for the protection of gardens' scenery.

The fact that no significant relationship was found between the measured physical variables (building ratio, observation point categories) and the liking degree of the buildings or perceived pleasantness of/disturbance from the buildings may indicate that people's perceptions about the external buildings may be related to the subjective variables rather than objective features of the environment. However, to test this hypothesis, it is necessary to conduct more extensive studies with more stimuli.

CHAPTER 7.

MAJOR SURVEY ON VISITORS' PERCEPTION OF HIGH-RISE BUILDING EFFECT ON HAMA-RIKYU GARDENS

7.1. Introduction

This chapter presents the major questionnaire conducted in Hama-rikyu Gardens to investigate garden visitors' perceptions and assessments about the external high-rise buildings' effect on the garden scenery.

Stamps and Nasar (1997) indicated that when the number of visual stimuli is limited, the results may be determined by the subjective characteristics of the respondents rather than the physical characteristics of an environment. The preliminary study which was presented in the previous chapter used eight different sites as visual stimuli which limited the study's representation. The questionnaire was assessed by 129 people in total. Therefore, it was insufficient to explain the extent of socio-demographic characteristics on the general perception of high-rise building effect on the garden. The respondents assessed each landscape by looking at the actual sceneries on site. However, the explanation for some of the results in detail required a visual stimulus which would use modified images with controlled view change to see if there would be a certain change when the scenes were free from the surrounding high-rise buildings. Besides, the fact that different participants assessed each observation point might have affected the consistency of the results presented in the preliminary study. Therefore, it was thought that the validity of the results should be tested with additional experiments questioning each respondent for every visual stimulus used.

7.1.1. Aims and Objectives

The results of the preliminary study gave a hint about the negative effect of high-rise buildings in the visitors' perception. However, to examine whether the high-rise buildings devalue the garden's scenery in visitors' perception; to answer the questions such as Who (e.g. who finds the high-rise buildings as a negative/positive effect on the garden), Why (e.g. why the high-rise buildings destroy/improve the garden's scenery), and How (how the given issue can be addressed), it is thought that a comprehensive visual stimuli, detailed propositions, and more participants should be used in the present major survey.

7.2. Methodology

7.2.1. Visual Stimulus

According to Kaplan and Kaplan (1989), there is no significant difference between the results derived by photographs (even if the photographs are black and white) as surrogates for real landscapes and the results derived by looking at actual landscapes on the field. Therefore, it was decided to represent the landscapes with photos in this study which let the usage of photo manipulation programs.

As Kaplan and Kaplan (1989) indicate, sampling of a site is an important issue in landscape preference studies. As aforementioned, Hama-rikyu Gardens is a grand-scale garden covering an area of 250,215.72 m^2, and high-rise buildings enter the garden's scenery from almost every observation point. Besides, the landscape features which enter a scenery would be effective on the preferences so that a careful sampling was needed.

Firstly, 92 photos were taken in the garden (using a DSLR camera with a 10 mm wide-angle lens mounted on a tripod fitted on 175 cm height) to cover various landscapes in order to increase variance. To achieve an objective preference for the photo selection and to achieve the most representative scenes in the garden, seven experts in spatial design and planning disciplines were invited to assess the photos. Experts assessed each photo regarding the dominance level of each landscape element (water, trees, hills, traditional structures, turf and groundcovers, paths, fields and crops, mixed) and conspicuousness level of external buildings on a 5-point Likert scale from 1 (absent or very weak) to 5 (very dominant). A sample (with one photo) of the assessment's survey can be seen in Appendix 4.

To see the internal consistency among the expert assessments, a reliability analysis was carried out, and the results showed a high level of consistency where Cronbach's alpha value was 0.876. For each landscape element in each photo, a total of mean scores were calculated from the assessments of the seven experts as a whole. Then, for each landscape element, mean scores of the photos were sorted from the highest mean score to the lowest mean score. The scores which were higher than 3 were averaged for each landscape element, as the scores lower than 3 meant either 'absent' or 'weak.' The analysis data is presented in Appendix 5.

As a result of the expert assessments, the five most dominant landscape components were derived (water, trees, traditional structures, paths, fields and crops). Three photos for each landscape component was selected based on their building ratio in the scenes (one for high ratio, one for moderate ratio, one for low ratio). As a result, 15 photos were selected in total, and they were manipulated by Photoshop CC 2018 to erase the external buildings from sceneries. Finally, 30 photos (15 original, 15 simulated versions) were used for the questionnaire on visitor judgments (Appendix 6).

7.2.2. Questionnaire

The questionnaire had three parts. The first part was the photo survey in which the 30 photos were placed (four photos on each page). The placement of the photos was done carefully not to affect people's assessment so that no photo pair (original photo and simulated version) was on the same page. Assessments on this part were designed to be done on five variables (how much the scenery is liked and four affective appraisals) on a 5-point Likert Scale. The second part of the questionnaire comprised a verbal attitude scale with 22 items to determine the respondents' level of agreement with the propositions about the effect of external buildings on the garden. Finally, socio-demographical variables were collected in the third part.

The selection of affective appraisals in the first part of the questionnaire, and the selection of 22 items in the verbal attitude scale of the second part of the questionnaire are explained as follows.

7.2.2.1. Selection of the affective appraisals

To reveal the relation of general affective appraisal adjectives to the context of the present study, a web-based survey was conducted (Appendix 7). A set of 29 affective appraisals were selected which were adopted from a variety of studies on landscape preferences (Russell 1988; Craik 1966; Hanyu 1997; Hanyu 2000; Arifin 1998; Motoyama and Hanyu 2014).

53 graduate-level students of Chiba University, Graduate School of Horticulture, voluntarily participated. The survey was prepared on Google Forms and sent to the participants' e-mail addresses. Participants were told that there were no right or wrong answers and that the personal data would not be identified. 29 set of affective appraisals were assessed by the survey participants on a 5-point bipolar scale where 1 and 5 equaled "very," 2 and 4 equaled "fairly," and 3 equaled "neutral."

For the visual stimuli, a photo from Hama-rikyu Gardens was used as a representative of the current situation of the garden's scenery. The photo contained a pond as a water element, trees, a bridge, and a tea-house as traditional structures and high-rise buildings at the background.

As a first step, a reliability analysis was carried out on the perceived task values scale comprising 29 items. Cronbach's alpha showed the questionnaire to reach acceptable reliability, $\alpha = 0.930$. However, six items (Orderly – Disorderly; Simple – complex; Warm – cool; Arousing – dull; Stimulating – Unstimulating; Ordinary – strange) were removed from the scale as their α value was higher than the given Cronbach's alpha. Their removal increased Cronbach's alpha to $\alpha = 0.945$. Next, a retest was carried out. Most items appeared to be worthy of retention, resulting in a decrease in the alpha if deleted. The one exception to this was item namely "open-closed," which would increase the alpha to $\alpha = 0.946$. As such, removal of this item was considered. As a result, seven items were removed from the scale.

In the second step, to examine to what extent these variables show similarities or dissimilarities in responses to the stimuli, a factor analysis was conducted on the 22 affective appraisal variables which were remained. Four factors of eigenvalue which were greater than or equal to 1.0 (eigenvalues criterion) were retained, and the factors were rotated using the varimax method. The eigenvalues of the first, second, third and fourth factors were 10.502, 2.122, 1.245 and 1.022 respectively, explaining 67.684% of the variance, while other eigenvalues were below 1.00. The eigenvalues were in favor of a four-factor solution which summarized and categorized total of 22 variables into 4 variables. The pattern of factor loading supports "natural-artificial", "calm-frenzied", "coherent-incoherent", "refreshing-exhausting", "harmonious-disharmonious", "relaxing-frustrating", "pleasing-displeasing", "safe-threatening", and "tranquil-tense" on Factor 1 and "beautiful-ugly", "inspiring-uninspiring", "interesting-boring", "favorable-unfavorable", "comfortable-uncomfortable", "exciting-unexciting", and "good-bad" on Factor 2 and "energizing-gloomy", "active-passive", "various-monotonous" on Factor 3 and "inviting-uninviting" and "restful-stressful" on Factor 4 (Table 7.1).

As a result, one bipolar affective appraisal from each factor was selected to be used in the questionnaire. The selected affective appraisals were "Natural – Artificial" from Factor 1; "Interesting – Boring" from Factor 2; "Various – Monotonous" from Factor 3; and "Restful – Stressful" from Factor 4.

Table 7. 1. Factor analysis on the bipolar adjective list

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
Natural - Artificial	.777			
Calm - Frenzied	.730			
Coherent - Incoherent	.723			
Refreshing - Exhausting	.704			
Secure - Insecure	.688			
Harmonious - Disharmonious	.671			
Relaxing - Frustrating	.638			
Pleasing - Displeasing	.634			
Safe - Threatening	.597			
Tranquil - Tense	.592			
Beautiful - Ugly		.750		
Inspiring - Uninspiring		.740		
Interesting - Boring		.734		
Favorable - Unfavorable		.675		
Comfortable - Uncomfortable		.662		
Exciting - Unexciting		.660		
Good - Bad		.614		
Energizing - Gloomy			.735	
Active - Passive			.682	
Various - Monotonous			.626	
Inviting - Uninviting				.805
Restful - Stressful				.622
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 12 iterations.				

7.2.2.2. Selection of propositions

22 propositions used in the second part of the questionnaire were selected from the related literature review and the previously conducted expert interviews. Propositions were assessed by the respondents on a 5-point scale where 1 = strongly disagree and 5 = strongly agree (Appendix 8).

7.2.3. Respondents

The respondents of the survey were selected to be the visitors of Hama-rikyu Garden. To reach a representative quantity of the whole population (visitors of the garden) and to form a suitable picture for analysis, the sample size was needed to be determined.

According to the data obtained from the management of Hama-rikyu Gardens, the mean of visitor numbers in the last 3 years was calculated as 866.872. The sample size for the respondents was selected on a 95% confidence level as higher confidence levels can cause Type II error in the statistical analyses of the data. Therefore, the results of the statistical analysis were derived based on the significance level at $p \leq 0.05$. As a result, with a 95% confidence level (where there is only a 5% chance that the sample results differ from the actual population), minimum sampling size was calculated as 323.

7.2.4. Procedure

The questionnaire was conducted on three consecutive days in March 2018 (March 24, 25, 26). Respondents voluntarily took part in the study. The instructions were presented in written and oral form (in English and Japanese). Respondents were required to answer the questions after strolling in the garden to make sure they have a certain image of the garden before participating in the survey. On completion, they returned the questionnaire sheets to a survey attendant.

500 questionnaires in total were distributed in the garden. 84% of the distributed questionnaires were returned as filled out to the survey attendants. As a result, the assessments from 420 respondents were examined in the analysis.

7.3. Results

The frequency distribution of respondents' socio-demographic background is given in Table 7.2. According to the data, 55.5 % (N=233) of the respondents were female, and 39.7 % (N=167) were male. The age range of the respondents was classified into six groups in which the highest number of respondents (N=123) were between the age range of '19-30', which was followed by the respondents (N=71) in the age range of '31-42'. The income level (annual) was categorized into seven groups. 34.3% (N=144) of the respondents had lower income than 3 million USD which was followed by the respondents (N=65) who had an income between 4-6 million USD. The education level of the respondents was divided into six groups ranging from elementary school to Ph.D. 52.4% (N=220) of the respondents indicated that they had a Bachelor's degree. Nationality was classified into two groups as Japanese (63.8%; N=268) and foreign (31%; N=130).

Table 7. 2. Socio-demographic background of the respondents

Gender		Female	Male	Missing						
	Frequency	233	167	20						
	%	55.5	39.7	4.8						
	Valid %	58.3	41.7							
Age		≤18	19-30	31-42	43-54	55-60	61 ≥	Missing		
	Frequency	7	123	71	33	10	14	162		
	%	1.7	29.3	16.9	7.9	2.4	3.3	38.6		
	Valid %	2.7	47.7	27.5	12.8	3.9	5.4			
Income		≤3million	3-4million	4-6million	6-8	8-10	10 ≥	Missing		
	Frequency	144	51	65	31	20	35	74		
	%	34.3	12.1	15.5	7.4	4.8	8.3	17.6		
	Valid %	41.6	14.7	18.8	9	5.8	10.1			
Education		diplom	Elementary	J. high	High	Bachelor's	Master's	Ph.D.	Other	Missing
	Frequency	1	2	4	41	220	93	9	15	35
	%	0.2	0.5	1	9.8	52.4	22.1	2.1	3.6	8.3
	Valid %	0.3	0.5	1	10.6	57.1	24.2	2.3	3.9	
Nationality		Japanese	Foreign	Missing						
	Frequency	268	130	22						
	%	63.8	31	5.2						
	Valid %	67.3	32.7							

7.3.1. Mean scores of preferences for the photos

Figure 7.1 represents the mean values of all photos and their sequence. The results show that the most liked scene (3.68) is one of the simulated photos (without buildings) whereas the least liked scene (2.81) have high-rise buildings in the background intensely. The sequence indicates that the most preferred top seven photos do not have buildings in their sceneries. In these seven most liked photos, the only original photo (not simulated) is Photo 4 in which the building ratio in its scenery is very weak, and buildings are inconspicuous at all. On the other hand, the least liked three photos at the bottom have the commonality of having buildings in their sceneries.

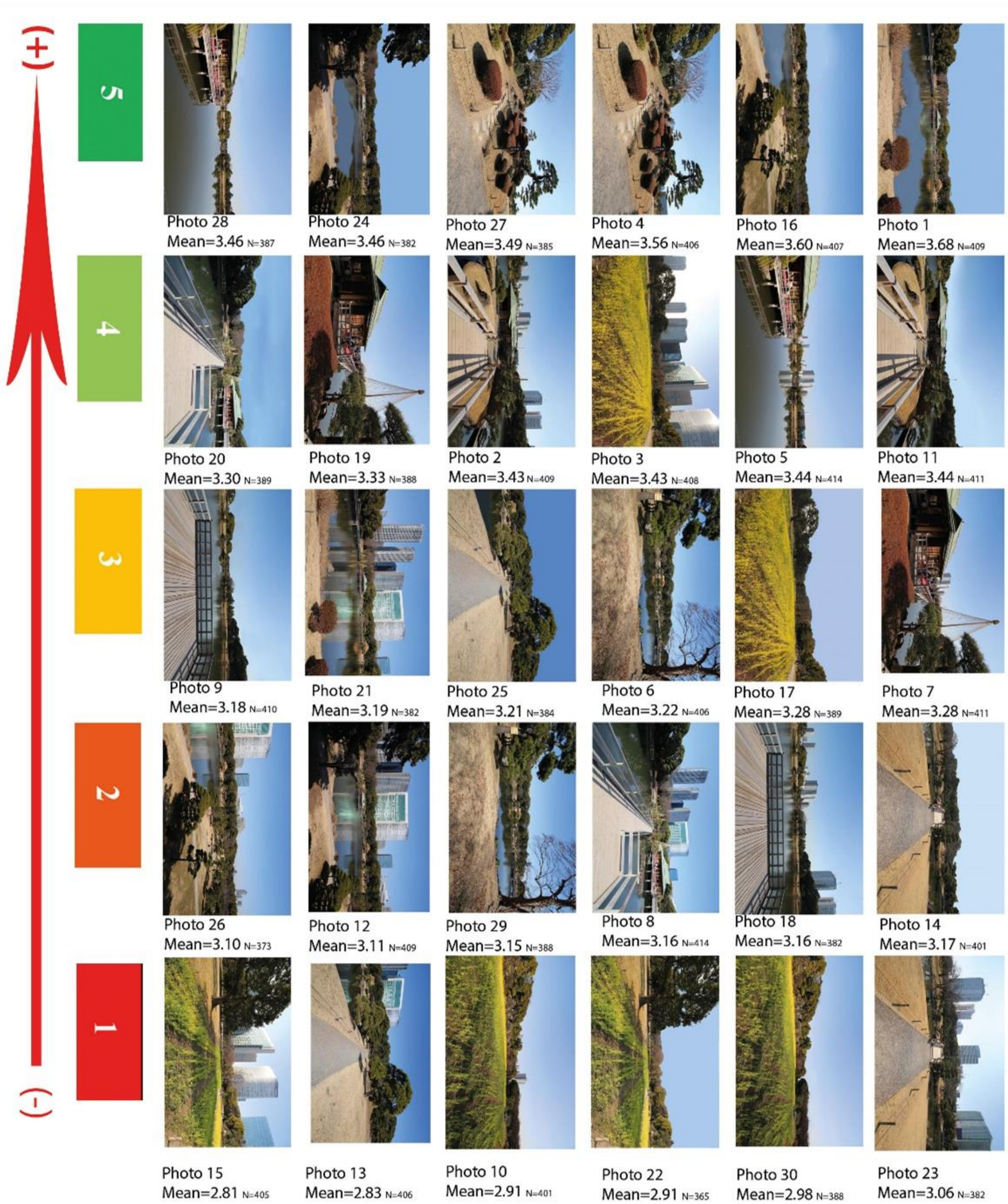


Fig. 7. 1. Sequence and mean values of the scenes

7.3.2. Comparison between preferences for the original photos and simulated photos

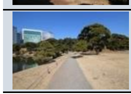
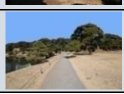
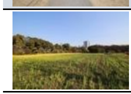
One-way ANOVA tests were carried out to examine the difference between the preferences for the original photos (with buildings) and their simulated versions (without buildings). The photos were split into two groups as 'original photos' and 'simulated photos' for comparison. According to the results, the group of 'simulated photos' (3.32) was significantly preferred over 'original photos' (3.18) ($F=61.7320$ $df=11889$ $p<0.001$) (Table 7.3).

Another one-way ANOVA test was done for each photo pair (original photo and its simulated version). Results show that the mean preference values of six photo pairs out of 15 have a significant difference (Table 7.3). The most dramatic differences occur in the photo pairs in which the simulated version (without buildings) of a photo was preferred over the original one (with buildings). The opposite is the case in only one photo pair.

The most dramatic difference occurs in a photo pair (Photo 16 – Photo 26) in which the simulated version of the photo (Photo 16) with the landscape features of water, trees, paths, groundcovers was significantly more preferred (3.60) than its original version (Photo 26) (3.10) with intensive high-rise buildings ($F=55.812$ $df=778$ $p<0.001$). The second highest difference (Photo 21 – Photo 1) is observed between a scene (Photo 21) with water, traditional structure features, and intensive high-rise buildings at the background (3.19) and its simulated version without buildings (Photo 1) (3.68) ($F=53.346$ $df=789$ $p<0.001$). It is followed by the photo pair (Photo 25 – Photo 13) in which the simulated version (Photo 25) (3.21) with a scenery of a straight path next to water and towards trees that was preferred over its original version (Photo 13) (2.83) ($F=36.468$ $df=788$ $p<0.001$). Another significant difference occurs between Photo 12 (3.11) which was the original version having a scenery of water, traditional structure, trees, and intensive buildings and its simulated version without buildings (Photo 24) (3.46) (F=26.541

df=789 p<0.001). Finally, it is followed by the photo pair in which the original photo (Photo 8) (3.16) having a bridge with traditional structure, water, trees and intensive high-rise buildings that was significantly less preferred than its simulated version (Photo 20) (3.30) (F=4.726 df=801 p<0.05).

Table 7. 3. Comparison of the photo pairs

Old code					N	Mean	Std. Deviation	df	F	P
Comparison			15 photos without building	No building	5901	3.32	0.96	1-11889	61.732	0.000***
			15 photos with building	Building Exist	5990	3.18	0.98			
			Photo 16	No building	407	3.60	0.95	1-778	55.812	0.000***
			Photo 26	Building Exist	373	3.10	0.89			
			Photo 6	No building	406	3.22	1.02	1-792	0.957	0.328
			Photo 29	Building Exist	388	3.15	0.98			
			Photo 1	No building	409	3.68	0.92	1-789	53.346	0.000***
			Photo 21	Building Exist	382	3.19	0.94			
			Photo 20	No building	389	3.30	0.87	1-801	4.726	0.030*
			Photo 8	Building Exist	414	3.16	1.00			
			Photo 27	No building	385	3.49	0.86	1-789	1.162	0.281
			Photo 4	Building Exist	406	3.56	0.92			
			Photo 24	No building	382	3.46	0.89	1-789	26.541	0.000***
			Photo 12	Building Exist	409	3.11	1.05			
			Photo 25	No building	384	3.21	0.90	1-788	36.468	0.000***
			Photo 13	Building Exist	406	2.83	0.88			
			Photo 30	No building	388	2.98	0.98	1-787	0.903	0.342
			Photo 10	Building Exist	401	2.91	0.98			
			Photo 11	No building	411	3.44	0.91	1-818	0.038	0.845
			Photo 2	Building Exist	409	3.43	0.92			
			Photo 14	No building	401	3.17	1.00	1-781	2.345	0.126
			Photo 23	Building Exist	382	3.06	0.90			
			Photo 22	No building	365	2.91	0.92	1-768	2.028	0.155
			Photo 15	Building Exist	405	2.81	1.01			
			Photo 28	No building	387	3.46	0.84	1-799	0.131	0.718
			Photo 5	Building Exist	414	3.44	0.95			
			Photo 17	No building	389	3.28	1.00	1-795	4.325	0.038*
			Photo 3	Building Exist	408	3.43	1.05			
			Photo 19	No building	388	3.33	0.96	1-797	0.475	0.491
			Photo 7	Building Exist	411	3.28	1.00			
			Photo 9	No building	410	3.18	1.01	1-790	0.071	0.790
			Photo 18	Building Exist	382	3.16	0.92			

***Significant at the p≤ 0.001 level * Significant at the p≤ 0.05 level

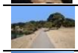
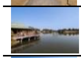
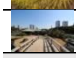
There is only one case where the original photo was preferred over its simulated version. In this pair, the original photo (Photo 3) (3.43) which has the scenery of a field and trees with middle ratio buildings at the background was preferred over its simulated version (Photo 17) (3.28) ($F=4.325$ $df=795$ $p<0.05$).

7.3.3. Categorization of the preferences for photos

In order to test the consistency of the model, a reliability analysis was performed. The analysis resulted in a good level of internal consistency value (Cronbach's alpha: 0.92). Then, to reveal the relationships between preferences for each photo and to see hypothetic factors which explain variables of a massive data, a factor analysis was carried out (Table 7.4).

As Table 7.4 presents, the factor analysis resulted in a five-factor solution. 11 items load onto Factor 1. When the photos in Factor 1 is investigated, the common feature of these photos is the absence of buildings in their landscapes regardless of the landscape elements in their content. Therefore, this factor can be labeled as 'Scenes without buildings.' 10 items load onto Factor 2 in which all the photos have high-rise buildings in their backgrounds. This factor was labeled as 'Scenes with buildings.' The four items that load onto Factor 3 are the photos in which the common feature is the field sceneries. This factor was labeled as 'Fields.' The three items load onto Factor 4 are the photos with tea-house sceneries. Two of the photos in this factor group are very similar since Photo 19 is the simulated version of Photo 7. The other photo in the factor group has scenery of a tea-house, pond and the buildings in the background. However, their common feature can be read with the label of 'Traditional structures.' Lastly, two items load onto Factor 4, and these photos are the sceneries of an artificial hill in the garden in which one of them is the other's simulated version without buildings. This factor was labeled as 'Hills.'

Table 7. 4. Rotated component matrix of factor analysis

	Component	1	2	3	4	5
	Factor 1 Scenes Without Building					
	photo 6 Preference	0.709				
	photo 24 Preference	0.690				
	photo 25 Preference	0.673				
	photo 9 Preference	0.659				
	photo 29 Preference	0.644				
	photo 16 Preference	0.644				
	photo 14 Preference	0.616				
	photo 28 Preference	0.607			0.402	
	photo 11 Preference	0.577				
	photo 20 Preference	0.555			0.431	
	photo 1 Preference	0.448				
	Factor 2 Scenes with building					
	photo 21 Preference		0.808			
	photo 12 Preference		0.779			
	photo 23 Preference		0.758			
	photo 26 Preference		0.719			
	photo 18 Preference		0.706			
	photo 8 Preference		0.685			
	photo 13 Preference		0.647			
	photo 15 Preference		0.645	0.458		
	photo 3 Preference		0.593	0.432		
	photo 2 Preference		0.461			
	Factor 3 Fields					
	photo 30 Preference			0.854		
	photo 17 Preference			0.783		
	photo 22 Preference			0.727		
	photo 10 Preference			0.682		
	Factor 4 Traditional Structures					
	photo 7 Preference				0.752	
	photo 19 Preference				0.723	
	photo 5 Preference				0.600	
	Factor 5 Hills					
	photo 4 Preference					0.711
	photo 27 Preference	0.471				0.618

An ANOVA test was performed to examine the mean preference values of each factor (Table 7.5). Results present a significant difference among the mean preference values (F=69.350, df=11886, p<0.001). The differences among factors' mean values were derived by a Tukey test. According to analysis results, Factor 5 (Hills) ($\acute{x}$ =3.52) is the most preferred factor while the second one is Factor 1 (Scenes without buildings) ($\acute{x}$ =3.35). It is followed by Factor 4 (Traditional structures) ($\acute{x}$ =3.35) and Factor 2 (Scenes with buildings ($\acute{x}$ =3.13). Finally, the least preferred factor is Factor 3 (Fields) $\acute{x}$ =3.02.

Table 7. 5. Comparison of preferences for the factors

	Factor	N	Mean	Std. Deviation	df	F	P
Preference of Respondents	Factor 1 Scenes without buildings [b]	4374	3.3541	0.95454	11886	69.350	0.000
	Factor 2 Scenes with buildings [c]	3970	3.1295	0.97789			
	Factor 3 Fields [d]	1543	3.0207	0.98475			
	Factor 4 Traditional Structures [b]	1213	3.3512	0.96831			
	Factor 5 Hills [a]	791	3.5234	0.89111			

[a b c d] Groups according to the Tukey test

7.3.4. Effect of landscape elements on landscape preferences

To examine whether the dominant landscape elements in each photo had an effect on the landscape preferences, the data was split into two in which one group was the simulated photos (without buildings), and the other group was the original photos (with buildings). Multiple regression analyses were carried out for each group separately.

7.3.4.1. Effect of landscape elements on the preference of the simulated photos

In the first analysis, the preferences for the simulated photos were taken as dependent variable whereas the dominance level of the landscape elements (except the dominance level of high-rise buildings, as all the photos in this group are free from the buildings) was taken as independent variables for the regression model.

Results indicate that the dominance level of three landscape elements which are 'trees,' 'hills,' and 'traditional structures' are significant and positive predictors for the preference of the simulated photos. Independent variables explained 2.9% of variance on the preferences (F=25.062 df= 7-5893 p<0.001) (Table 7.6).

Table 7. 6. The effect of landscape elements on the simulated photos

B_EX	Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part
.00	1	(Constant)	3.001	.376		7.975	.000			
		Water	.002	.036	.003	.056	.956	.110	.001	.001
		Trees	.147	.039	.090	3.806	.000	.046	.050	.049
		Hills	.142	.031	.083	4.647	.000	.089	.060	.060
		Traditional Structures	.074	.018	.082	4.216	.000	.075	.055	.054
		Turf / Ground-cover	-.110	.057	-.064	-1.937	.053	.004	-.025	-.025
		Paths	-.029	.020	-.031	-1.487	.137	.009	-.019	-.019
		Fields	-.078	.046	-.088	-1.714	.087	-.129	-.022	-.022
R=0.170; R^2=0.029 $F_{(7-5893)}$=25.062 p<0.001										

7.3.4.2. Effect of landscape elements on the preference of the original photos

Another multiple regression analysis was performed to investigate the effect of landscape elements on the preference for the original photos (with buildings). Preferences for the original photos were taken as the dependent variable whereas all the landscape elements (including dominance level of high-rise buildings) were taken as independent variables (Table 7.7).

Table 7. 7. The effect of landscape elements on the original photos

B_EX	Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part
1.00	1	(Constant)	3.782	.389		9.712	.000			
		Water	-.059	.037	-.080	-1.593	.111	.039	-.021	-.020
		Trees	-.116	.040	-.069	-2.898	.004	-.075	-.037	-.037
		Hills	.259	.031	.150	8.370	.000	.105	.108	.106
		Traditional Structures	.068	.019	.074	3.586	.000	.112	.046	.046
		Turf / Ground-cover	-.058	.059	-.033	-.986	.324	-.051	-.013	-.013
		Paths	-.101	.022	-.103	-4.674	.000	-.007	-.060	-.059
		Fields	-.093	.046	-.105	-2.029	.042	-.053	-.026	-.026
		External Buildings	-.008	.017	-.007	-.455	.649	-.032	-.006	-.006
R=0.185; R^2=0.034 $F_{(8-5981)}$=26.494 p<0.001										

Results indicate that five landscape elements (trees, hills, traditional structures, paths, fields) are significantly effective on the preferences for the original photos. ‘Trees,’ ‘paths,’ and ‘fields’ are negative indicators whereas ‘hills’ and ‘traditional structures’ are positive indicators. Dominance level of high-rise buildings in a scene is not a significant indicator for the preferences which is parallel with the preliminary survey’s results. Independent variables explain 2.9% of variance on the preferences (F=26.496, df= 8-5981, p<0.001).

7.3.5. Reflection of affective appraisals on landscape preferences

Affective appraisals are considered essential components for the evaluation of human perception on landscape aesthetics. As stated previously, four affective appraisals were extracted by a pilot study. The investigation of the relationship between the affective appraisals and landscape preferences was done by multiple regression analyses.

7.3.5.1. Reflection of affective appraisals on the preference of the simulated photos

The first multiple regression analysis was carried out for the simulated photos (without buildings) Preferences for the simulated photos were taken as the dependent variable while the four affective appraisals were the independent variables (Table 7.8).

Table 7. 8. Regression analysis for affective appraisals and the simulated photos

B_EX	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
			B	Std. Error	Beta			Zero-order	Partial	Part
.00	1	(Constant)	5.691	.044		128.337	.000			
		Artificial - Natural	-.016	.009	-.018	-1.657	.098	-.157	-.022	-.017
		Boring - Interesting	-.503	.014	-.453	-34.803	.000	-.578	-.425	-.364
		Monotonous - Various	-.075	.012	-.081	-6.477	.000	-.370	-.087	-.068
		Stressful - Restful	-.319	.014	-.254	-22.124	.000	-.413	-.286	-.231
R=0.632; R^2=0.399 $F_{(4\text{-}5498)}$ =914.287 p<0.001										

Results demonstrate that three affective appraisal pairs (boring-interesting; monotonous-various; stressful-restful) are significantly effective on the preferences for the simulated photos. All the three pairs are negative indicators meaning that boring, monotonous and stressful are significant determinants of the landscape preferences. Independent variables explain 39.9% of variance on the preference (F=914.287 df= 4-5498 p<0.001).

7.3.5.2. Reflection of affective appraisals on the preference of the original photos

Another multiple regression analysis was performed for the original photos. Preferences for the original photos (with buildings) were taken as the dependent variable while the four affective appraisals were the independent variables (Table 7.9).

Results indicate that the same three affective appraisal pairs (boring-interesting; monotonous-various; stressful-restful) are significantly effective on the preferences for the original photos. All the three pairs are negative indicators meaning that boring, monotonous and stressful are significant determinants for the landscape preferences. Independent variables explain 43% of variance on the preference (F=1047.337 df= 4-5985 p<0.001).

Table 7. 9. Regression analysis for affective appraisals and the original photos

Coefficients[a]										
B_EX	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
			B	Std. Error	Beta			Zero-order	Partial	Part
1.00	1	(Constant)	5.648	.049		114.474	.000			
		Artificial - Natural	-.006	.011	-.006	-.512	.609	-.149	-.007	-.005
		Boring - Interesting	-.547	.016	-.475	-35.094	.000	-.613	-.426	-.355
		Monotonous - Various	-.093	.014	-.086	-6.674	.000	-.427	-.089	-.068
		Stressful - Restful	-.279	.014	-.238	-20.611	.000	-.425	-.266	-.209
R=0.656; R^2=0.430 $F_{(4-5985)}$ =1047.337 p<0.001										

7.3.5.3. Shift in affective appraisals of the respondents

In order to examine if visitors' affective appraisals for the garden sceneries change depending on the existence of the high-rise buildings, comparisons were done between each photo pair. Results show significant differences in all affective appraisals regarding the presence or absence of the buildings. Analysis results are presented in Appendix 9 in detail.

According to the results, the artificial-natural scale shows a significant difference in 13 photo pairs out of 15 (except the photo pairs of Photo 20 – Photo 18 and Photo 27- Photo 4, all the photo pairs show a significant difference). As Figure 7.2 presents, simulated photos (without building) are perceived more natural in all the photo pairs except one pair.

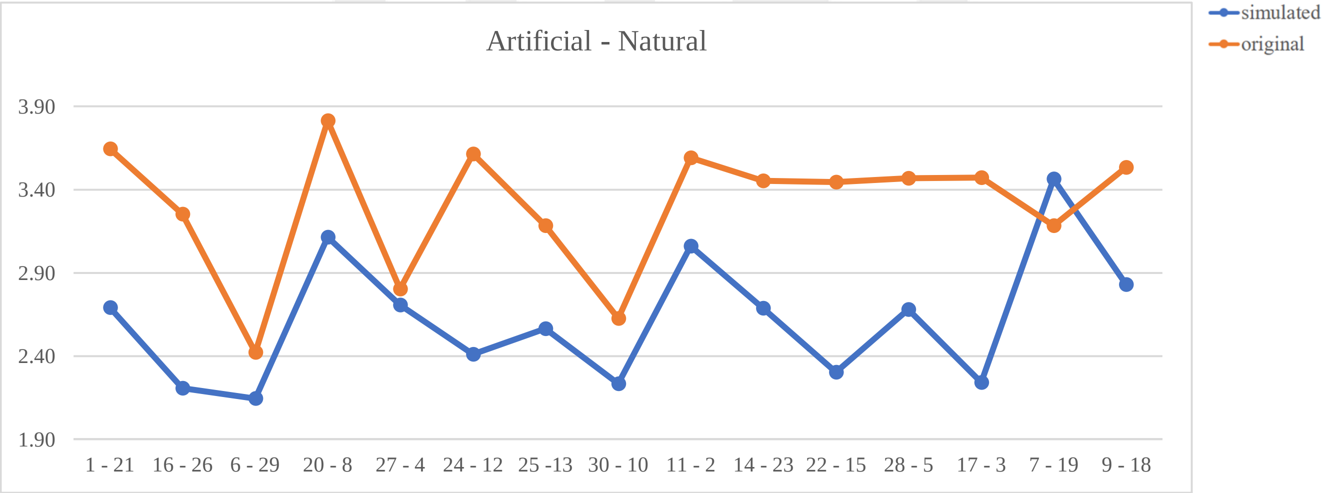


Fig. 7.2. Artificial-Natural scale in photo pairs

Figure 7.3 presents the perceived stressful-restful scale in photo pairs. Results indicate that 12 photo pairs out of 15 are significantly different. The three photo pairs which do not demonstrate significance are Photo 6 – Photo 20; Photo 27 – Photo 4 and Photo 19 – 7. According to the results, it is seen that simulated photos are perceived significantly more restful compared to their original versions in 11 photo pairs.

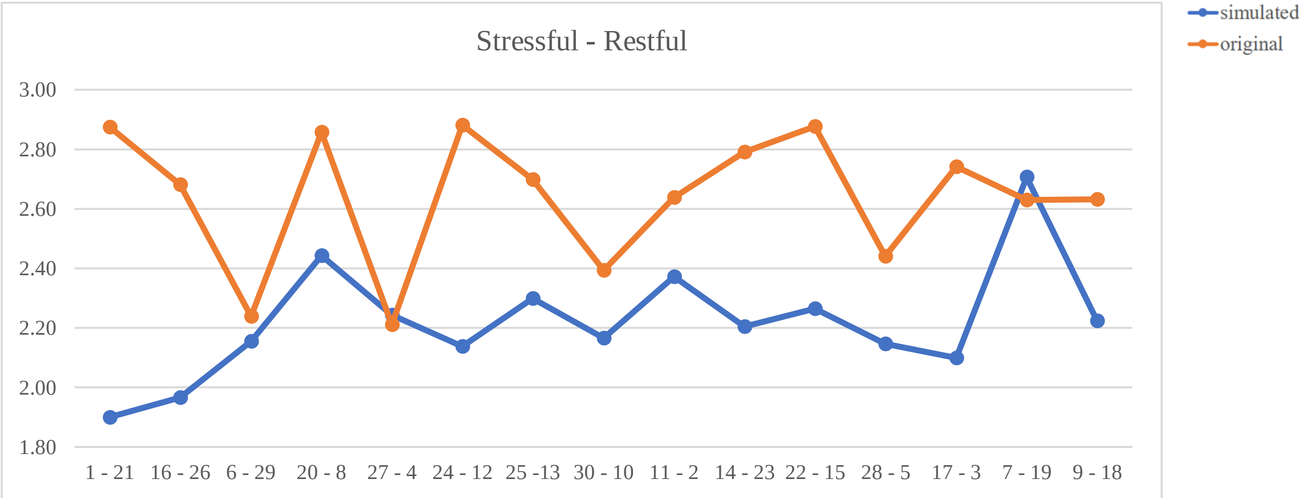


Fig. 7.3. Stressful - Restful scale in photo pairs

According to the results, the boring-interesting scale shows a significant difference in eight photo pairs out of 15 (Photo 1 – 21; Photo 16 – 26; Photo 25-13; Photo 11-2; Photo 14-23; Photo 22-15; Photo 17-3; Photo 9-18). As Figure 7.4 presents, the original photos (with buildings) are perceived significantly more interesting compared to their simulated versions in seven photo pairs.

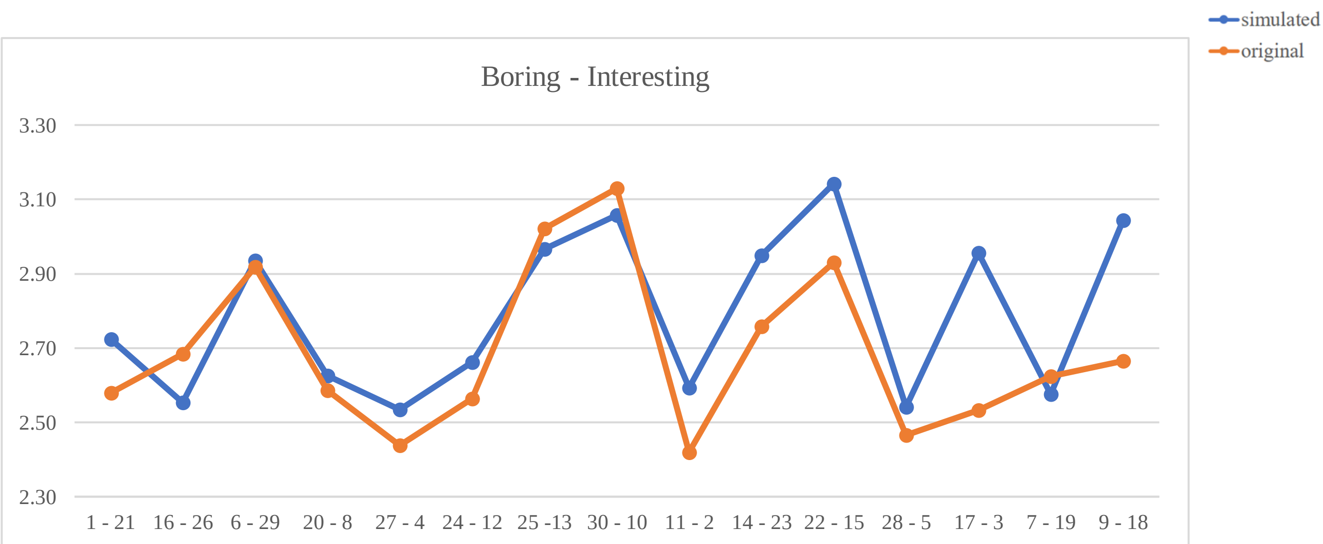


Fig 7.4. Boring – Interesting scale in photo pairs

Results demonstrate that 12 photo pairs out 15 show a significant difference in monotonous-various scale (except the photo pairs namely Photo 6-29; Photo 27- 4; Photo 30-10, all the photo pairs show a significant difference). All the significant differences occur in a way that the original photos are perceived significantly more ‘various’ compared to the simulated ones (Figure 7.5).

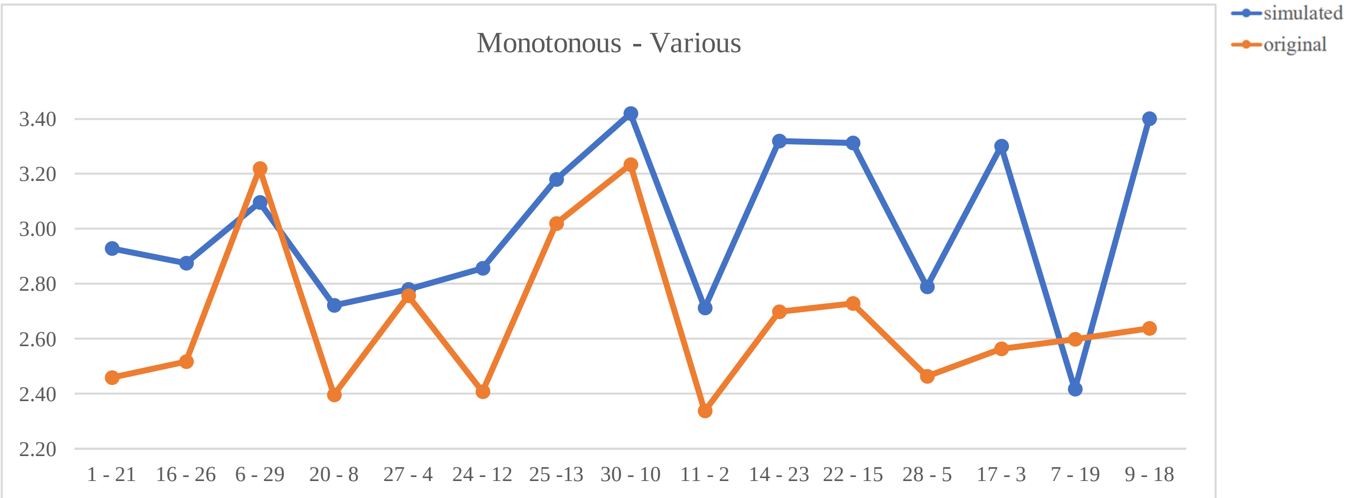


Fig 7.5. Monotonous – Various scale in photo pairs

7.3.6. Effect of socio-demographic background on landscape preferences

7.3.6.1. Socio-demographic variables and categorized photos

To examine the effect of respondents' socio-demographic background on landscape preferences, the visual stimuli data was split into two groups as simulated photos (without buildings) and original photos (with buildings). Multiple regression analyses were carried out for each group separately.

7.3.6.1.1. Socio-demographic variables and the simulated photos

In the first analysis, the preferences for the simulated photos were taken as dependent variable whereas the demographic parametric variables such as age, income, education level and non-parametric variables such as gender, whether the respondent had visited Hama-rikyu before or not, whether any other traditional Japanese garden had been visited or not, whether the occupation is related to design disciplines or not, if any graduate level classes about natural environmental studies were taken, and nationality variable was taken as independent variables for the regression model. These non-parametric variables were used as a dummy variable in which one of the values of these variables was coded as 1 while the other one was coded as 0.

Analysis results indicate that five of the socio-demographic variables which are age, gender, education, natural environment class, and nationality are significantly effective on the simulated photos' preferences. Independent variables explain 1.5% of the variance ($F=5.155$ $df= 9\text{-}3122$ $p<0.001$) (Table 7.10). Based on the results, it is deduced that the older the age gets, preference for simulated photos without buildings increases. In terms of the gender variable, female respondents' preference for simulated photos is significantly higher than of the male. Like the age variable, education level is also a positive indicator for the preferences. Results show that as the level of education increases, the preference for the simulated photos increases as well. On the other hand, 'taken natural environment class' is a negative indicator for the preferences. It means that the respondents who had taken natural environment class prefer simulated photos less compared to the ones who had not taken. Another negative indicator is the nationality variable. Results show that Japanese respondents have a significantly lower preference for the simulated photos compared to the foreign respondents.

Table 7. 10. Socio-demographic variables and the simulated photos

Coefficients[a]										
B_ EX	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
			B	Std. Error	Beta			Zero-order	Partial	Part
.00	1	(Constant)	2.954	.094		31.502	.000			
		Age	.006	.002	.071	3.552	.000	.056	.063	.063
		Income	-.012	.011	-.020	-1.069	.285	.002	-.019	-.019
		Gender	-.084	.036	-.043	-2.316	.021	-.031	-.041	-.041
		Education	.070	.018	.075	3.886	.000	.074	.069	.069
		Previous visit to Hama-rikyu	-.054	.044	-.025	-1.220	.222	-.016	-.022	-.022
		Previous visit to another traditional Japanese garden	.083	.049	.033	1.708	.088	.029	.031	.030
		Designer/Non-Designer	.054	.048	.022	1.109	.268	.004	.020	.020
		Taken nature class	-.115	.058	-.039	-1.970	.049	-.011	-.035	-.035
		Nationality	-.078	.040	-.040	-1.978	.048	-.048	-.035	-.035
R=0.121; R^2=0.015 $F_{(9\text{-}3122)}$=5.155 p<0.001										

7.3.6.1.2. Socio-demographic variables and the original photos

Another multiple regression analysis was carried out to investigate the effect of socio-demographic variables on the preference for the original photos (with buildings). Preferences for the original photos were taken as the dependent variable whereas the demographic parametric and non-parametric variables were taken as independent variables for the regression model.

Results indicate that three of the socio-demographic variables which are age, education level, and nationality were significant and positive predictors for the preferences. Independent variables explain 2.7% of variance on preferences (F=9.735 df= 9-3256 p<0.001) (Table 7.11). Based on the results, the age variable is a negative indicator to predict the preference for the original photos. The older the age gets, the preference for the original buildings decreases. This result is in parallel with the previous analysis's result in which the older age group preferred the simulated photos significantly more. However, same as the previous analysis results, education level is found to be a positive indicator of the preferences for the original photos which indicate that as the education level increases, preference for the scenes with high-rise buildings increases too. Being another parallel finding with the previous analysis, nationality variable is a negative indicator for the preferences; Japanese respondents' preference for the original photos is significantly lower than of foreign respondents.

Table 7. 11. Socio-demographic variables and the original photos

Coefficients										
B_EX	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
			B	Std. Error	Beta			Zero-order	Partial	Part
1.00	1	(Constant)	3.218	.094		34.354	.000			
		Age	-.004	.002	-.057	-2.858	.004	-.066	-.051	-.050
		Income	.005	.011	.008	.446	.656	-.003	.008	.008
		Gender	-.014	.036	-.007	-.400	.689	.020	-.007	-.007
		Education	.076	.018	.081	4.252	.000	.106	.075	.075
		Previous visit to Hama-rikyu	.048	.044	.022	1.091	.275	-.050	.019	.019
		Previous visit to another traditional Japanese garden	-.034	.048	-.013	-.700	.484	-.042	-.012	-.012
		Designer/Non-Designer	.013	.048	.005	.270	.787	-.002	.005	.005
		Taken nature class	-.011	.058	-.004	-.187	.852	.001	-.003	-.003
		Nationality	-.220	.039	-.112	-5.636	.000	-.137	-.100	-.099
$R=0.164$; $R^2=0.027$ $F_{(9\text{-}3156)}=9.735$ $p<0.001$										

7.3.6.2. Socio-demographic variables and the whole visual stimulus

To achieve a more detailed investigation of the socio-demographic variables' effect on landscape preferences, one-way ANOVA tests were carried out for each socio-demographic variable. In these analyses, instead of separating the data into two categories (simulated – original), the whole 30 photos were taken in the analysis as individuals.

Preferences according to gender: In the first analysis, the relationship between gender and preferences for 30 photos was sorted (Table 7.12). Analysis results present significant differences in four photos according to gender. These are photo 5, photo 12, photo 13 and photo 15 that were significantly less preferred by female respondents compared to the male respondents. The common feature of these photos is that all the photos are the original photos which contain high-rise buildings in different conspicuousness levels in their sceneries. Photo 5 which has low-ratio buildings at the background, was less preferred by the females (3.33) compared to the males (3.55); the difference is significant at $p<0.05$ level ($F=5.411$ $df=392$ $p<0.05$). The most dramatic difference is observed in photo 12 which has high-ratio high-rise buildings. Mean preference value of the female respondents (2.97) is significantly lower than of the male respondents (3.25) and the difference is significant at $p<0.01$ level ($F=6.810$ $df=389$ $p>0.01$). Photo 13 was less preferred by the female respondents (2.74) compared to the males (2.93) ($F=4.76$ $df=387$ $p<0.05$). Finally, photo 15 was less preferred by the female respondents (2.7) compared to the males (2.94) ($F=5.513$ $df=386$ $p<0.05$). Preferences for other photos are not significantly different by gender.

Table 7. 12. One-way ANOVA for gender and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 5 Preference	Female	230	3.3304	.95049	392	5.411	.021
	Male	164	3.5549	.93502			
photo 12 Preference	Female	230	2.9739	1.02340	389	6.810	.009
	Male	161	3.2547	1.07981			
photo 13 Preference	Female	224	2.7411	.85490	387	4.276	.039
	Male	165	2.9273	.90772			
photo 15 Preference	Female	223	2.7040	.97368	386	5.513	.019
	Male	165	2.9455	1.03744			

Preferences according to income level: In the second analysis, the relationship between income level and preferences for 30 photos was sorted (Table 7.13). Results show that preferences for three photos are significantly different among income level groups. These photos are photo 16, photo 18 and photo 28. The common feature of these three photos' preference is that the most dramatic preference difference occurred between '6-8 million income' group and '8-10 million income' group. Photo 16 which is a simulated photo without buildings at the background was less preferred by 8-10 million income group (3.00) compared to the other groups whereas 6-8 million income group was the most preferred group (3.87) and the difference is significant at p<0.01 level (F=3.144 df=333 p<0.01). Photo 18 was the least preferred by 6-8 million income level group (2.90) whereas the group that preferred this photo the most has 10 million and above income (3.53) (F=2.2384 df=319 p≤0,05). Photo 28 is the least liked by 8-10 million income group (3.00) and most liked by 6-8 million income group (4.57) (F=2.430 df=325 p<0.05).

Table 7. 13. One-way ANOVA for income level and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 16 Preference	3 million	140	3.7143	.92360	333	3.144	.009
	3-4 million	51	3.3922	.89618			
	4-6 million	64	3.6719	.97679			
	6-8 million	30	3.8667	.86037			
	8-10 million	20	3.0000	1.07606			
	10 million	34	3.6765	.91189			
photo 18 Preference	3 million	131	3.1756	.93217	319	2.238	.050
	3-4 million	48	2.9375	.83555			
	4-6 million	63	3.0794	.92111			
	6-8 million	31	2.9032	.90755			
	8-10 million	20	3.1500	.74516			
	10 million	32	3.5313	.84183			
photo 28 Preference	3 million	135	3.4815	.83623	325	2.430	.035
	3-4 million	50	3.3800	.75295			
	4-6 million	64	3.4531	.87159			
	6-8 million	30	4.5667	5.43731			
	8-10 million	19	3.0000	.74536			
	10 million	33	3.5758	.75126			

Preferences according to educational status: In the third analysis the relationship between educational status and preferences for 30 photos was sorted (Table 7.14). Results show that preferences for four photos are significantly different among educational status groups. These are photo 12, photo 15, photo 18, and photo 28.

Table 7. 14. One-way ANOVA for educational status and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 12 Preference	Junior-high-school	4	3.0000	1.41421	372	2.634	.023
	High-school	40	2.7500	.89872			
	Bachelor's Degree	217	3.0922	1.02324			
	Master's Degree	92	3.3152	1.08870			
	Ph.D.	9	3.6667	1.00000			
	Other	16	2.7500	1.06458			
photo 15 Preference	Junior high-school	4	2.5000	.57735	369	2.290	.045
	High-school	39	2.5897	.81815			
	Bachelor's Degree	214	2.7710	1.00183			
	Master's Degree	93	3.0860	1.08002			
	Ph.D.	9	2.6667	.70711			
	Other	16	2.5000	1.03280			
photo 18 Preference	Junior-high-school	4	1.7500	.50000	355	6.127	.000
	High-school	37	2.7838	.88616			
	Bachelor's Degree	206	3.1359	.91650			
	Master's Degree	88	3.4659	.84349			
	Ph.D.	9	3.5556	.52705			
	Other	17	2.8824	.99262			
photo 28 Preference	Junior-high-school	4	3.2500	.50000	361	2.529	.029
	High-school	36	3.5000	.91026			
	Bachelor's Degree	211	3.4597	.79405			
	Master's Degree	90	3.5111	.92705			
	Ph.D.	9	3.4444	.88192			
	Other	17	5.0000	7.26292			

Photo 12 is preferred the least by the high-school group (2.75) and the most by the Ph.D. group (3.67); the difference between these two groups is significant at $p<0.05$ level ($F=2.634$ $df=372$ $p<0.05$). This photo contains a higher ratio of the high-rise building at the background of the scene compared to the other significant photos. Photo 15 was less preferred by the junior-high school group (2.5) compared to the master's degree group (3.09) ($F=2.290$ $df=369$ $p<0.05$). The most dramatic difference occurs in photo 18 which is a view from the terrace of Nakajima teahouse towards the pond and Kachidoki area's high-buildings at the background. This photo was less preferred by the junior-high-school group (1.75) compared to the Ph.D. group (3.56); the difference is significant at $p<0.001$ level ($F=6.127$ $df=3559$ $p>0.001$). Finally, photo 28 was less preferred by the junior-high-school group (3.25) than the 'others' group (5.00) ($F=2.529$ $df=361$ $p<0.05$).

Preferences according to childhood place: In another analysis, the relationship between the spatial character of the place where most of the childhood took place and preferences for 30 photos was sorted (Table 7.15).

Table 7. 15. One-way ANOVA for childhood place and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 2 Preference	Rural	124	3.3065	.92988	385	3.043	.029
	Suburban	126	3.5159	.86472			
	Urban	101	3.3564	.91197			
	Metropol	38	3.7632	.99822			
photo 3 Preference	Rural	124	3.4597	.96608	384	3.065	.028
	Suburban	126	3.2540	1.05782			
	Urban	100	3.4500	1.10440			
	Metropol	38	3.8158	.89610			
photo 14 Preference	Rural	120	3.1750	.99294	379	3.873	.009
	Suburban	125	3.3680	.98812			
	Urban	100	2.9200	.97110			
	Metropol	38	3.2368	.99822			
photo 19 Preference	Rural	120	3.3167	.96130	370	2.772	.041
	Suburban	116	3.4310	.98001			
	Urban	101	3.1386	.92768			
	Metropol	37	3.5946	.86472			
photo 30 Preference	Rural	120	3.0167	.89802	373	4.345	.005
	Suburban	119	2.8487	1.03857			
	Urban	101	2.8515	.93152			
	Metropol	37	3.4595	1.06965			

Results show that preferences for five photos (photo 2, photo 3, photo 14, photo 19, photo 30) are significantly different among the 'childhood place' groups. Photo 2 is the least preferred by the rural group (3.31) and the most preferred by the Metropol group (3.76) (F=3.043 df=385 $p<0.05$). Another photo which was least preferred by the suburban group (3.25) and most preferred by the Metropol group is Photo 3 (3.82) (F=3.065 df=384 $p<0.01$). Photo 14 was least preferred by the urban group (2.92) and most preferred by the suburban group (3.37) (F=3.873 df=379 $p<0.01$). Photo19 was least preferred by the urban group (3.14) and most preferred by the Metropol group (3.42) (F=2.772 df=370 $p<0.05$). Lastly, photo 30 was least preferred by the suburban group (2.85) and most preferred by the Metropol group (3.46) (F=4.345 df=373 $p\leq0.005$).

Preferences according to current residence: The relationship between current living place and preferences for 30 photos was sorted (Table 7.16). Results show that preferences for three photos (photo 3, photo 17, photo 30) are significantly different among current residence groups.

Table 7. 16. One-way ANOVA for current residence and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 3 Preference	Rural	32	3.6250	.94186	382	2.839	.024
	Suburban	99	3.2525	1.04338			
	Urban	163	3.3497	1.09168			
	Metropol	90	3.7000	.86700			
	Other	3	3.3333	2.08167			
photo 17 Preference	Rural	32	3.0000	.91581	370	3.186	.014
	Suburban	96	3.0938	1.00607			
	Urban	159	3.2830	.95554			
	Metropol	85	3.5412	.93290			
	Other	3	3.6667	2.30940			
photo 30 Preference	Rural	30	2.9667	.92786	371	2.501	.042
	Suburban	97	2.9175	.96469			
	Urban	158	2.8481	.91816			
	Metropol	89	3.2360	1.08735			
	Other	2	3.5000	.70711			

Photo 3 was least preferred by the Suburban group (3.25) and most preferred by the Metropol group (3.7) ($F=2.839$ $df=382$ $p<0.05$). Photo 17 was least preferred by the Rural group (3.00) and most preferred by the Other group (3.67) ($F=3.186$ $df=370$ $p<0.05$). Photo 30 was least preferred by Urban group (2.85) and most preferred by the Other group (3.5) ($F=2.501$ $df=371$ $p\leq0.005$).

Preferences according to the previous visit to Hama-rikyu Gardens: In another analysis, the relationship between the previous visit to Hama-rikyu gardens and preferences for 30 photos was sorted (Table 7.17). Results present that preferences for six photos are significantly different.

Table 7. 17. One-way ANOVA for visit to Hama-rikyu and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 4 Preference	Yes	144	3.4306	.92103	386	4.551	.034
	No	244	3.6352	.90844			
photo 14 Preference	Yes	145	3.0414	.95653	383	4.499	.035
	No	240	3.2625	1.01136			
photo 15 Preference	Yes	147	2.6531	.98379	387	5.615	.018
	No	242	2.9008	1.00954			
photo 16 Preference	Yes	147	3.4830	.88638	390	4.262	.040
	No	245	3.6857	.97257			
photo 18 Preference	Yes	137	3.0000	.84017	368	6.739	.010
	No	233	3.2532	.94244			
photo 23 Preference	Yes	139	2.8993	.82791	369	8.075	.005
	No	232	3.1681	.91274			

Photo 4 was more preferred by the ‘first time visitor’ group (3.64) compared to the ‘multiple visits’ group (3.43); the difference is significant at $p<0.05$ level ($F=4.551$ $df=386$ $p<0.05$). Photo 14 was more preferred by the first time visitors (3.26) compared to the multiple visits group (3.04); the difference is significant at $p<0.05$ level ($F=4.499$ $df=383$ $p<0.05$). Photo 15 was more preferred by the first time visitors (2.90) compared to the multiple visits group (2.65); the difference is significant at p<0.05 level (F=5.615 df=387 p<0.05). Photo 16 was more preferred by the first-time visitor group (3.69) compared to the multiple visits group (3.48); the difference is significant at p<0.05 level (F=4.262 df=390 p<0.05). Photo 18 was more preferred by the first-time visitor group (3.25) compared to the multiple visits group (3.0); the difference is significant at p<0.05 level (F=6.739 df=386 p<0.05). Finally, photo 23 was more preferred by the first-time visitor group (3.17) compared to the multiple visits group (2.90) (F=8.075 df=369 p≤0.005).

Preferences according to visits to traditional Japanese gardens: The relationship between the previous visit to any other traditional Japanese garden and preferences for 30 photos was sorted (Table 7.18). Results demonstrate that preferences for two photos are significantly different between two groups.

Table 7. 18. One-way ANOVA for a visit to traditional Japanese gardens and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 15 Preference	Yes	336	2.7649	1.01691	385	4.341	0.38
	No	51	3.0784	.89091			
photo 19 Preference	Yes	322	3.3789	.94023	371	5.061	.025
	No	51	3.0588	.96771			

Photo 15 was more preferred by the first-time visitor group (3.08) compared to the multiple visits group (2.76); the difference is significant at p<0.05 level (F=4.341 df=385 p<0.05). Another significant difference occurs in Photo 19. Photo 19 was less preferred by the first-time visitor group (3.06) compared to the multiple visits group (3.38); the difference is significant at p<0.05 level (F=5.061 df=371 p<0.05).

Preferences according to occupation: In another analysis, the relationship between being a designer or not and preferences for 30 photos was sorted (Table 7.19). Results indicate that preferences for only one photo are significantly different between designers and non-designers.

Photo 28 was less preferred by non-designers (3.45) compared to designers (4.03); the difference is significant at $p<0.05$ level ($F=6.066$ $df=374$ $p<0.05$).

Table 7. 19 One-way ANOVA for occupation and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 28 Preference	Yes	64	4.0313	3.75423	374	6.066	.014
	No	312	3.4487	.84712			

Preferences according to nationality: In the last analysis the relationship between nationality and preferences for 30 photos was sorted (Table 7.20). Results show that preferences for 16 photos are significantly different between Japanese and foreign respondent groups.

Photo 2, photo 3, photo 4, photo 8, photo 9, photo 12, photo 13, photo 15, photo 16, photo 18, photo 21, photo 23, photo 26, photo 27 and photo 29 were significantly different regarding the preference by nationality. For all the photos, Japanese respondents' preferences are lower than of foreign respondents.

Table 7. 20. One-way ANOVA for nationality and landscape preferences

		N	Mean	Std. Deviation	df	F	Sig.
photo 2 Preference	Japanese	264	3.3561	.94834	388	6.594	.011
	Foreign	126	3.6111	.84827			
photo 3 Preference	Japanese	263	3.3118	1.03458	387	10.687	.001
	Foreign	126	3.6746	1.00263			
photo 4 Preference	Japanese	261	3.4023	.87872	385	25.380	.000
	Foreign	126	3.8889	.91409			
photo 8 Preference	Japanese	265	3.0679	1.00525	392	5.863	.016
	Foreign	129	3.3256	.96147			
photo 9 Preference	Japanese	264	3.1061	.98473	389	5.892	.016
	Foreign	127	3.3701	1.05261			
photo 12 Preference	Japanese	264	2.9205	1.05248	389	25.346	.000
	Foreign	127	3.4724	.93288			
photo 13 Preference	Japanese	264	2.7652	.85317	387	4.925	.027
	Foreign	125	2.9760	.91989			
photo 15 Preference	Japanese	262	2.6947	.97000	386	10.731	.001
	Foreign	126	3.0476	1.04198			
photo 16 Preference	Japanese	264	3.5303	.88020	389	6.466	.011
	Foreign	127	3.7874	1.04373			
photo 18 Preference	Japanese	247	2.9960	.86249	367	25.632	.000
	Foreign	122	3.4918	.92928			
photo 21 Preference	Japanese	252	3.0675	.96110	367	15.384	.000
	Foreign	117	3.4701	.81550			
photo 23 Preference	Japanese	252	2.9444	.86826	368	15.669	.000
	Foreign	118	3.3305	.88728			
photo 26 Preference	Japanese	246	3.0081	.87127	360	10.992	.001
	Foreign	116	3.3362	.89388			
photo 27 Preference	Japanese	250	3.3320	.82978	372	28.814	.000
	Foreign	124	3.8226	.83664			
photo 29 Preference	Japanese	256	3.0586	.94167	375	9.035	.003
	Foreign	121	3.3802	1.02678			

7.3.7. The extent of the propositions on landscape preferences

To examine the relationship between the agreement level to the propositions and the landscape preferences, two separate linear regression analyses were carried out for the simulated photos (without buildings) and the original photos (with buildings) respectively.

7.3.7.1. Propositions and preferences for the simulated photos

In the first analysis, preferences for the simulated photos were taken as the dependent variable while the twenty-two propositions were the independent variables.

Results indicate that eight propositions are significantly in relation to the preferences for the photos without buildings. Independent variables explain 5.8% of the variance (F=14.680 df= 22-5256 p<0.001) (Table 7.21). Seven propositions ('*The external buildings devalue the garden's scenery'; 'I can feel untouched nature in this garden*'; '*This garden is a good representative of traditional Japanese gardens*'; '*This garden is a good representative of Tokyo's urban image*'; '*The external buildings dwarf the garden elements*'; '*I wish I could see natural elements in the far distance such as Mt. Fuji, Mt. Tsukuba, the ocean rather than the high-rise buildings*'; '*The external buildings symbolize the modernism*') are positive indicators. On the other hand, the proposition of '*The external buildings are a symbol of economic development*' is a negative indicator.

Table 7. 21. Relation between the propositions and the preferences for the simulated photos

B_EX	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
			B	Std. Error	Beta			Zero-order	Partial	Part
.00	1	(Constant)	1.379	.180		7.665	.000			
		1. The combination of external buildings and the traditional garden is inappropriate	-.020	.016	-.022	-1.266	.206	.026	-.017	-.017
		2. The external buildings devalue the garden's scenery.	.074	.022	.082	3.323	.001	.074	.046	.044
		3. I can feel untouched nature in this garden.	.041	.013	.044	3.053	.002	.078	.042	.041
		4. The external buildings have a negative impact on the garden's scenery.	.002	.008	.004	.243	.808	.023	.003	.003
		5. The combination of the traditional garden and the modern buildings at the background is attractive for me.	.021	.020	.023	1.073	.284	-.032	.015	.014
		6. The external buildings help me to navigate in the garden.	-.013	.015	-.013	-.876	.381	-.019	-.012	-.012
		7. This garden is a good representative of traditional Japanese gardens.	.175	.018	.138	9.506	.000	.161	.130	.127
		8. This garden is a good representative of Tokyo's urban image.	.116	.017	.107	6.966	.000	.088	.096	.093
		9. The external buildings dwarf the garden elements.	.080	.019	.078	4.117	.000	.080	.057	.055
		10. It is not easy to focus on the garden's scenery because of the external buildings.	-.004	.019	-.004	-.193	.847	.042	-.003	-.003
		11. The external buildings create a sense of oppression.	.006	.018	.007	.350	.726	.044	.005	.005
		12. This garden looks like a modern urban park rather than a traditional garden due to the external buildings.	-.026	.014	-.029	-1.789	.074	.000	-.025	-.024
		13. I wish I could see natural elements in the far distance (such as Mt. Fuji. Mt. Tsukuba. the ocean) rather than the high-rise buildings.	.062	.016	.066	3.955	.000	.106	.054	.053
		14. It would be better if the external buildings were covered by green walls (plants).	.026	.013	.030	1.909	.056	.054	.026	.026
		15. The external buildings damage the historical atmosphere of the garden.	.032	.022	.033	1.460	.144	.059	.020	.020
		16. The external building views create an eyesore.	-.020	.022	-.022	-.919	.358	.051	-.013	-.012
		17. The external buildings are in harmony with the garden scenery.	-.017	.017	-.018	-1.035	.301	-.037	-.014	-.014
		18. External building sceneries from inside the garden can be called 'borrowed scenery'.	-.020	.016	-.018	-1.226	.220	-.037	-.017	-.016
		19. There is a loss of character in this garden because of the external buildings' visual intrusion.	-.026	.022	-.026	-1.177	.239	.053	-.016	-.016
		20. The external buildings are a symbol of economic development.	-.047	.024	-.038	-1.972	.049	.019	-.027	-.026
		21. The external buildings symbolize the modernism.	.084	.026	.063	3.185	.001	.056	.044	.043
		22. The external buildings are awe-inspiring.	.035	.018	.031	1.925	.054	-.023	.027	.026

R=0.241; R^2=0.058 $F_{(22\text{-}5256)}$=14.680 p<0.001

7.3.7.2. Propositions and preferences for the original photos

In the second analysis, preference for the original photos (with buildings) was taken as the dependent variable while the twenty-two propositions were the independent variables.

Results demonstrate that twelve propositions are significantly in relation to the preferences for the original photos. Independent variables explain 12.3% of the variance ($F=33.627$ $df= 22-5286$ $p<0.001$) (Table 7.22). Nine propositions (*'The external buildings have a negative impact on the garden's scenery'*; *'The combination of the traditional garden and the modern buildings at the background is attractive for me'*; *'The external buildings help me to navigate in the garden'*; *'This garden is a good representative of traditional Japanese gardens'*; *'This garden is a good representative of Tokyo's urban image'*; *'The external buildings dwarf the garden elements'*; *'It would be better if the external buildings were covered by green walls (plants)'*; *'The external buildings damage the historical atmosphere of the garden'*; *'The external buildings are awe-inspiring'*) are positive indicators. On the other hand, three propositions ('*The combination of external buildings and the traditional garden is inappropriate'*; *'The external buildings create a sense of oppression'*; *'There is a loss of character in this garden because of the external buildings' visual intrusion'*) are negative indicators on the preferences.

Table 7. 22. The relation between propositions and the preferences for the original photos

B_EX	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
			B	Std. Error	Beta			Zero-order	Partial	Part
		(Constant)	1.426	.178		8.017	.000			
		1. The combination of external buildings and the traditional garden is inappropriate	-.065	.016	-.071	-4.171	.000	-.214	-.057	-.054
		2. The external buildings devalue the garden's scenery.	.018	.022	.019	.816	.414	-.235	.011	.011
		3. I can feel untouched nature in this garden.	.004	.013	.004	.279	.780	.037	.004	.004
		4. The external buildings have a negative impact on the garden's scenery.	.017	.008	.033	2.223	.026	-.123	.031	.029
		5. The combination of the traditional garden and the modern buildings at the background is attractive for me.	.152	.020	.158	7.767	.000	.279	.106	.100
		6. The external buildings help me to navigate in the garden.	.045	.015	.042	3.033	.002	.112	.042	.039
		7. This garden is a good representative of traditional Japanese gardens.	.125	.018	.096	6.867	.000	.122	.094	.088
		8. This garden is a good representative of Tokyo's urban image.	.087	.017	.078	5.268	.000	.182	.072	.068
		9. The external buildings dwarf the garden elements.	.040	.019	.038	2.088	.037	-.167	.029	.027
		10. It is not easy to focus on the garden's scenery because of the external buildings.	.002	.019	.002	.117	.907	-.206	.002	.002
		11. The external buildings create a sense of oppression.	-.094	.018	-.104	-5.228	.000	-.234	-.072	-.067
1.00	1	12. This garden looks like a modern urban park rather than a traditional garden due to the external buildings.	-.005	.014	-.005	-.347	.729	-.107	-.005	-.004
		13. I wish I could see natural elements in the far distance (such as Mt. Fuji. Mt. Tsukuba. the ocean) rather than the high-rise buildings.	.024	.016	.024	1.515	.130	-.096	.021	.020
		14. It would be better if the external buildings were covered by green walls (plants).	.035	.013	.040	2.623	.009	-.036	.036	.034
		15. The external buildings damage the historical atmosphere of the garden.	.080	.021	.081	3.722	.000	-.179	.051	.048
		16. The external building views create an eyesore.	-.030	.022	-.031	-1.380	.168	-.225	-.019	-.018
		17. The external buildings are in harmony with the garden scenery.	.007	.016	.007	.424	.671	.186	.006	.005
		18. External building sceneries from inside the garden can be called 'borrowed scenery'.	.024	.016	.020	1.453	.146	.126	.020	.019
		19. There is a loss of character in this garden because of the external buildings' visual intrusion.	-.084	.022	-.080	-3.785	.000	-.220	-.052	-.049
		20. The external buildings are a symbol of economic development.	-.009	.023	-.007	-.392	.695	.045	-.005	-.005
		21. The external buildings symbolize the modernism.	.018	.026	.013	.672	.502	.075	.009	.009
		22. The external buildings are awe-inspiring.	.083	.018	.071	4.640	.000	.176	.064	.060

$R=0.350$; $R^2=0.123$ $F_{(22\text{-}5286)}=33.627$ $p<0.001$

7.3.8. Visitors’ attitudes towards the propositions

Table 7.23 presents the frequency and mean values of the general attitude towards the propositions that is the verbal stimuli of the questionnaire data.

According to the results, most of the respondents (34.4%) presented a neutral view towards the proposition of ‘*The combination of external buildings and the traditional garden is inappropriate*.’ On the other hand, the mean value of this proposition is quite low (2.74) as the total percentage of respondents who disagreed and strongly disagreed with this proposition is 41.4%.

Attitude towards the proposition of ‘*The external buildings devalue the garden’s scenery*’shows that the total number of respondents who disagreed with (N=126; 31.4%) and were neutral (N=126; 31.4%) towards this proposition are the majority. Once again, the mean score of this proposition is low (2.74), as the total disagreement including the range of strongly disagree is the majority.

The respondents who were neutral towards the proposition of ‘*I can feel untouched nature in this garden*’ is the majority (N=129; 32.3 %) whereas the total respondents who agreed and strongly agreed with the proposition reach to a percentage of 35%. The majority (N=128; 31.9%-disagree; N=53; 13.2%-strongly disagree) disagreed with the proposition of ‘*The external buildings have a negative impact on the garden’s scenery*.’

The majority (N=170; 42.3%) agreed that ‘*The combination of the traditional garden and the modern buildings at the background is attractive for me.*’ Most of the respondents (38.5%) were neutral towards the proposition of ‘*The external buildings help me to navigate in the garden*’ whereas total respondents who agreed (37.2%-agree; 4.9%-strongly agree) raise the mean score of this proposition to 3.36.

The majority (N=231, 57.5%) agreed, and none of the respondents strongly disagreed that ‘*This garden is a good representative of traditional Japanese gardens.*’ Most of the respondents (48.4%) agreed with the proposition of ‘*This garden is a good representative of Tokyo’s urban image*.’

Most of the respondents (39.2%) were neutral towards the proposition of '*The external buildings dwarf the garden elements*.'The majority (N=155; 38.6%) disagreed that '*It is not easy to focus on the garden's scenery because of the external buildings*.'

Most of the respondents (36.3%) disagreed with the proposition of '*The external buildings create a sense of oppression.*'The majority (N=132, 33%) agreed that '*This garden looks like a modern urban park rather than a traditional garden due to the external buildings*.'

The majority (agree: N=142, 35.5%; strongly agree: N=56, 14%;) agreed that '*I wish I could see natural elements in the far distance (such as Mt. Fuji, Mt. Tsukuba, the ocean) rather than the high-rise buildings*.'Most of the respondents (32.3%) were neutral towards the proposition of '*It would be better if the external buildings were covered by green walls (plants)*.' However, the total percentage of the respondents who disagreed (28.4%-disagree; 17.2%-strongly disagree) is 45.6%.

The majority (N=159, 39.8%) disagreed that '*The external buildings damage the historical atmosphere of the garden*.'Most of the respondents (N=150, 38%) disagreed with the proposition of '*The external building views create an eyesore.*'.

Most of the respondents (36.9%) were neutral towards the proposition of '*The external buildings are in harmony with the garden scenery*.'Most of the respondents (51.6%) were neutral towards the proposition of '*External building sceneries from inside the garden can be called 'borrowed scenery*.'

The majority (N=169; 42.7%) disagreed that '*There is a loss of character in this garden because of the external buildings' visual intrusion.*' The majority (N=219; 54.8%) agreed that '*The external buildings are a symbol of economic development.*'

The majority (N=229; 57.3%) agreed that '*The external buildings symbolize the modernism.* Lastly, most of the respondents (48.9%) were neutral towards the proposition of '*The external buildings are awe-inspiring*.'

Table 7. 23. Frequency and mean values of the propositions

	N	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
1. The combination of external buildings and the traditional garden is inappropriate	%	13.4	28	34.4	19.6	4.7	2.74	1.07
	404	54	113	139	79	19		
2. The external buildings devalue the garden's scenery.	%	12.0	31.4	31.4	20.9	4.2	2.74	1.05
	401	48	126	126	84	17		
3. I can feel untouched nature in this garden.	%	7.0	25.8	32.3	28.7	6.3	3.01	1.04
	400	28	103	129	115	25		
4. The external buildings have a negative impact on the garden's scenery.	%	13.2	31.9	29.6	20.9	4.2	2.79	1.85
	401	53	128	119	84	17		
5. The combination of the traditional garden and the modern buildings at the background is attractive to me.	%	2.7	10.4	23.6	42.3	20.9	3.68	1.06
	402	11	42	95	170	84		
6. The external buildings help me to navigate in the garden.	%	4	15.4	38.5	37.2	4.9	3.36	2.73
	403	16	62	155	150	20		
7. This garden is a good representative of traditional Japanese gardens.	%	0	6.7	23.4	57.5	12.4	3.76	.75
	402	0	27	94	231	50		
8. This garden is a good representative of Tokyo's urban image.	%	1	9.2	24.2	48.4	17.2	3.72	.89
	401	4	37	97	194	69		
9. The external buildings dwarf the garden elements.	%	7	31.2	39.2	19.3	3.3	2.81	.94
	398	28	124	156	77	13		
10. It is not easy to focus on the garden's scenery because of the external buildings.	%	16.2	38.6	25.1	16.2	4.0	2.53	1.07
	402	65	155	101	65	16		
11. The external buildings create a sense of oppression.	%	12.8	36.3	27.1	18.0	5.8	2.68	1.09
	399	51	145	108	72	23		
12. This garden looks like a modern urban park rather than a traditional garden due to the external buildings.	%	8	22.3	28.5	33	8.3	3.11	1.09
	400	32	89	114	132	33		
13. I wish I could see natural elements in the far distance (such as Mt. Fuji. Mt. Tsukuba. the ocean) rather than the high-rise buildings.	%	3	15.3	32.3	35.5	14	3.42	1.01
	400	12	61	129	142	56		
14. It would be better if the external buildings were covered by green walls (plants).	%	17.2	28.4	32.3	17.4	4.7	2.64	1.01
	402	69	114	130	70	19		
15. The external buildings damage the historical atmosphere of the garden.	%	10	39.8	27.8	19.3	3	2.65	.99
	399	40	159	111	77	12		
16. The external building views create an eyesore.	%	15.4	38	30.9	12.4	3.3	2.50	1.00
	395	61	150	122	49	13		
17. The external buildings are in harmony with the garden scenery.	%	6.5	23.6	36.9	29.1	3.8	3.00	.97
	398	26	94	147	116	15		
18. External building sceneries from inside the garden can be called 'borrowed scenery'.	%	4.1	15.8	51.6	25.4	3.1	3.08	.84
	386	16	61	199	98	12		
19. There is a loss of character in this garden because of the external buildings' visual intrusion.	%	11.1	42.7	30.6	13.6	2	2.53	.93
	396	44	169	121	54	8		
20. The external buildings are a symbol of economic development.	%	1.3	4.8	24.5	54.8	14.8	3.77	.80
	400	5	19	98	219	59		
21. The external buildings symbolize the modernism.	%	0.3	3.8	19.8	57.3	19	3.91	.74
	400	1	15	79	229	76		
22. The external buildings are awe-inspiring.	%	4.8	24.4	48.9	19.1	2.8	2.91	.86
	397	19	97	194	76	11		

7.3.9. The relationship between the propositions

To reveal the relationships between the propositions and to see hypothetic categories which would explain variables of a massive data, a factor analysis was carried out on the data. The analysis yielded a five-factor solution (Table 7.24).

Table 7. 24. Factor analysis on the propositions

Factor analysis					
	Component				
	1	2	3	4	5
2. The external buildings devalue the garden's scenery.	.821				
16. The external building views create an eyesore.	.780				
10. It is not easy to focus on the garden's scenery because of the external buildings.	.777				
11. The external buildings create a sense of oppression.	.771				
19. There is a loss of character in this garden because of the external buildings' visual intrusion.	.754				
15. The external buildings damage the historical atmosphere of the garden.	.727				
9. The external buildings dwarf the garden elements.	.721				
5. The combination of the traditional garden and the modern buildings at the background is attractive to me.	-.716				
1. The combination of external buildings and the traditional garden is inappropriate	.694				
4. The external buildings have a negative impact on the garden's scenery.	.591				
21. The external buildings symbolize the modernism.		.883			
20. The external buildings are a symbol of economic development.		.854			
8. This garden is a good representative of Tokyo's urban image.	-.418	.453			
22. The external buildings are awe-inspiring.			.664		
6. The external buildings help me to navigate in the garden.			.662		
17. The external buildings are in harmony with the garden scenery.	-.482		.527		
18. External building sceneries from inside the garden can be called 'borrowed scenery'.			.419		
14. It would be better if the external buildings were covered by green walls (plants).				.629	
13. I wish I could see natural elements in the far distance (such as Mt. Fuji. Mt. Tsukuba. the ocean) rather than the high-rise buildings.				.545	
12. This garden looks like a modern urban park rather than a traditional garden due to the external buildings.				.492	-.440
3. I can feel untouched nature in this garden.					.752
7. This garden is a good representative of traditional Japanese gardens.					.688

10 items load onto Factor 1. When the propositions in Factor 1 is investigated, all the propositions except one indicates the negative effect of high-rise buildings on the garden's visual quality or its identity. The only proposition which indicates a positive effect of the high-rise buildings on the garden

(*5. The combination of the traditional garden and the modern buildings at the background is attractive for me*) loads onto this factor category on the negative direction (disagreement level). Therefore, since all the 10 items are opponent through the high-rise intrusion, Factor 1 was labeled as "negative aspects of high-rise buildings."

3 items load onto Factor 2. The propositions in this factor are about the symbolization of the high-rise buildings such as the economy, modernism, and urban image. Hence, this factor was labeled as "symbolic meaning of high-rise buildings."

4 items load onto Factor 3. These propositions attribute a positive meaning to high-rise buildings. Therefore, this factor was labeled as "positive aspects of high-rise buildings."

2 items load onto Factor 4. These propositions which are "*14. it would be better if the external buildings were covered by green walls (plants)*" and "*13. I wish I could see natural elements in the far distance (such as Mt. Fuji, Mt. Tsukuba, the ocean) rather than the high-rise buildings*" emphasize a desire for a natural-view or natural-look. Therefore, this factor was labeled as "nature demand."

Lastly, 3 items load onto Factor 5 in which the propositions point out the original spirit of the garden such as being a traditional garden and having an untouched natural-look. Hence, this factor was labeled as "identity of the garden."

An ANOVA test was carried out to examine preference scores of each factor. The descriptive statistics are given in Table 7.25. Results indicate a significant difference among the agreements towards the proposition categories ($F=16.414$ $df=17$ $p<0.001$). The differences between the mean values of the proposition categories were derived by a Tukey test.

According to the results, Factor 2 (symbolic meaning of high-rise buildings) ($\acute{x}$ =3.80) is the group with the most agreement level while the second one is Factor 5 (identity of the garden) $\acute{x}$ =3.38. It is followed by Factor 3 (positive aspects of high-rise buildings) $\acute{x}$ =3.09 and Factor 4 (nature demand)$\acute{x}$ =3.06. Finally, the category with the least agreement rate is Factor 1 (negative aspects of high-rise buildings) $\acute{x}$ =2.63.

Table 7. 25. Comparison among the attitudes towards the proposition categories

	Factor	N	Mean	Std. Deviation	df	F value	P value
Preference of Respondents	Factor 1 [c]	9	2.6290	0.15567	4-17	16.414	0.000
	Factor 2 [a]	3	3.8000	0.09849			
	Factor 3 [bc]	4	3.0875	0.19449			
	Factor 4 [bc]	3	3.0567	0.39273			
	Factor 5 [ab]	2	3.3850	0.53033			

[a b c d] Groups according to the Tukey test

7.3.9.1. A closer look at the garden's identity

Correlation analysis was carried out to examine the correlation between the proposition of '*This garden is a good representative of traditional Japanese gardens*' and other twenty-one propositions (Table 7.26). '*This garden is a good representative of traditional Japanese gardens'* was selected as an indicator for the garden's identity.

Results demonstrate that five propositions are correlated with the identity indicator. The agreement level of the proposition that '*I can feel untouched nature in this garden*' is highly and positively correlated with the identity variable (r=0.192, p<0.001). Other significantly and positively correlated propositions with the identity indicator are '*The combination of the traditional garden and the modern buildings at the background is attractive for me*.' (r=0.099, p<0.05), '*This garden is a good* *representative of Tokyo's urban image*' (r=0.124, p<0.05) and '*The external buildings symbolize the modernism*.' (r=0.137, p<0.01). On the other hand, the propositions of '*It is not easy to focus on the garden's scenery because of the external buildings*' (r= - 0.145, p<0.005) and '*This garden looks like a modern urban park rather than a traditional garden due to the external buildings*' (r= - 0.184, p<0.001) correlate with the identity indicator at the negative direction. The explication of these garbled results will be discussed later in the discussion section.

Table 7. 26. Correlated propositions with the identity indicator

		7. This garden is a good representative of traditional Japanese gardens.
3. I can feel untouched nature in this garden.	Pearson Correlation	.192**
	Sig. (2-tailed)	.000
	N	399
5. The combination of the traditional garden and the modern buildings at the background is attractive for me.	Pearson Correlation	.099*
	Sig. (2-tailed)	.048
	N	401
8. This garden is a good representative of Tokyo's urban image.	Pearson Correlation	.124*
	Sig. (2-tailed)	.013
	N	401
10. It is not easy to focus on the garden's scenery because of the external buildings.	Pearson Correlation	-.145**
	Sig. (2-tailed)	.004
	N	401
12. This garden looks like a modern urban park rather than a traditional garden due to the external buildings.	Pearson Correlation	-.184**
	Sig. (2-tailed)	.000
	N	399
21. The external buildings symbolize the modernism.	Pearson Correlation	.137**
	Sig. (2-tailed)	.006
	N	399
**. Correlation is significant at the 0.01 level (2-tailed).		
*. Correlation is significant at the 0.05 level (2-tailed).		

7.3.10. Extend of socio-demographic background on propositions

To examine the effect of socio-demographic background on the respondents' agreement level on the propositions, one-way ANOVA tests were carried out for each socio-demographic variable.

Attitudes towards propositions according to gender: Firstly, the propositions were sorted by the gender (Table 7.27).

Table 7. 27. One-way ANOVA for gender and propositions

		N	Mean	Std. Deviation	df	F	Sig.
2. The external buildings devalue the garden's scenery.	Female	226	2.8451	1.05321	387	5.987	.015
	Male	163	2.5828	1.02930			
11. The external buildings create a sense of oppression.	Female	227	2.8062	1.07972	386	8.156	.005
	Male	161	2.4907	1.06136			

Results indicate that two propositions have significantly different agreement level by gender. The agreement level of the female respondents (2.84) on the proposition of '*The external buildings devalue the garden's scenery*' is significantly higher than of the male respondents (2.59) ($F=5.987$ $df=387$ $p<0.05$). Concordantly, results show that the agreement level on the proposition of '*The external buildings create a sense of oppression*' is significantly higher for the female respondents (2.81) compared to the males (2.49) ($F=8.156$ $df=386$ $p\leq 0.005$). Results for these two propositions and the preferences for the photos with high-rise buildings demonstrate consistency on the phenomena that female visitors are more sensitive to the negative effect of the high-rise buildings on the garden.

Attitudes towards propositions according to income level: Another ANOVA test was done to sort the propositions by income groups (Table 2.28).

Table 7. 28. One-way ANOVA for income level and propositions

		N	Mean	Std. Deviation	df	F	Sig.
2. The external buildings devalue the garden's scenery.	≤3 million	141	2.7447	1.05833	333	2.475	0.032
	3-4 million	51	3.0196	.98975			
	4-6 million	64	2.7656	1.01953			
	6-8 million	30	2.8000	1.03057			
	8-10 million	20	2.7000	1.08094			
	10 million ≥	33	2.2121	1.05349			
10. It is not easy to focus on the garden's scenery because of the external buildings.	≤3 million	141	2.6738	1.07236	333	2.461	0.033
	3-4 million	51	2.6078	1.04074			
	4-6 million	64	2.5938	1.13695			
	6-8 million	30	2.6667	1.15470			
	8-10 million	20	2.4500	.75915			
	10 million ≥	33	1.9697	1.04537			
11. The external buildings create a sense of oppression.	≤3 million	141	2.7872	1.12000	332	3.656	0.003
	3-4 million	50	2.8200	1.06311			
	4-6 million	65	2.8000	1.12083			
	6-8 million	30	2.7667	1.16511			
	8-10 million	20	2.3000	.86450			
	10 million ≥	32	2.0000	.87988			
12. This garden looks like a modern urban park rather than a traditional garden due to the external buildings.	≤3 million	141	3.0496	1.10406	333	2.76	0.018
	3-4 million	51	3.0588	1.12092			
	4-6 million	64	3.1406	1.06707			
	6-8 million	30	3.7000	.87691			
	8-10 million	20	3.2000	1.19649			
	10 million ≥	33	2.7273	1.03901			
15. The external buildings damage the historical atmosphere of the garden.	≤3 million	141	2.7801	1.01483	333	3.331	0.006
	3-4 million	51	2.7843	1.11917			
	4-6 million	65	2.6000	.86241			
	6-8 million	30	2.9000	.92289			
	8-10 million	19	2.5789	1.16980			
	10 million ≥	33	2.0606	.96629			

Agreement level on five propositions among the twenty-two propositions is significantly different by income groups. Before proceeding to the estimation of the significant propositions one by one, it would be helpful to consider all of them in accordance with their meanings. According to the results, significant propositions by income groups are *'The external buildings devalue the garden's scenery'*, *'It is not easy to focus on the garden's scenery because of the external buildings'*, *'The external buildings create a sense of oppression'*, *'This garden looks like a modern urban park rather than a traditional garden due to the external buildings'* and *'The external buildings damage the historical* *atmosphere of the garden.'* Accordingly, it can be observed that all these propositions point out to the negative effect of high-rise buildings on the garden's scenery. Thus, it can be deduced that the attitude towards the negative effect of high-rise buildings are affected by the average income level group, as the respondents who presented higher agreement level with these propositions are from the lower income groups in general. High-income level groups, on the other hand, presented a higher disagreement with the propositions above.

If we look at the propositions closely one by one, results indicate that the agreement level on the proposition of *'The external buildings devalue the garden's scenery'* is significantly different by income groups where the highest agreement is detected on the 3-4 million income group (3.02), and the highest disagreement is on the 10 million group (2.21); the difference is significant at $p<0.05$ level ($F=2.475$ $df=333$ $p<0.05$). Another significant difference occurs in the proposition of *'It is not easy to focus on the garden's scenery because of the external buildings.'* The highest agreement on this proposition is seen in the 3 million income group (2.67) whereas the highest disagreement was presented by the 10 million group (1.97) ($F=2.461$ $df=333$ $p<0.05$). Another significant proposition is *'The external buildings create a sense of oppression.'* The 3-4 million income group (2.82) presented the highest agreement with this proposition, while the 10 million income group (2.0) presented the highest disagreement ($F=3.656$ $df=332$ $p<0.005$). The proposition of *'This garden looks like a modern urban park rather than a traditional garden due to the external buildings'* is another significant one. The highest agreement on this proposition was presented by the 6-8 million income group (3.7) whereas the the 10 million income group (2.73) is the group that showed the highest disagreement ($F=2.76$ $df=333$ $p<0.05$). The last significant proposition is *'The external buildings damage the historical atmosphere of* *the garden'* on which the 6-8 million income group (2.9) presented the highest agreement while the 10 million group (2.06) showed the highest disagreement (2.06) (F=3.331 df=332 p<0.01).

Attitudes towards propositions according to the previous visit to Hama-rikyu Gardens: In the third analysis, propositions were sorted by the visit to Hama-rikyu Gardens (Table 7.29).

Table 7. 29. One-way ANOVA for a visit to Hama-rikyu and propositions

		N	Mean	Std. Deviation	df	F	Sig.
1. The combination of external buildings and the traditional garden is inappropriate	Yes	146	2.8767	1.04314	390	3.856	.050
	No	246	2.6585	1.07536			
2. The external buildings devalue the garden's scenery.	Yes	146	2.9041	1.06563	389	6.220	.013
	No	245	2.6327	1.02617			
5. The combination of the traditional garden and the modern buildings at the background is attractive to me.	Yes	145	3.5103	1.05486	389	6.054	.014
	No	246	3.7683	.96847			
7. This garden is a good representative of traditional Japanese gardens.	Yes	145	3.8828	.68215	389	7.341	.007
	No	246	3.6707	.78332			
20. The external buildings are a symbol of economic development.	Yes	146	3.6575	.83409	389	4.827	.029
	No	245	3.8408	.77563			
21. The external buildings symbolize the modernism.	Yes	146	3.8082	.79059	389	4.441	.036
	No	245	3.9714	.70942			

Results indicate that there are five propositions that have significantly different agreement level by the visit to the garden. The agreement level on the proposition of '*The combination of external buildings and the traditional garden is inappropriate*' is significantly different between the 'first-time visitor' group and 'multiple visits' group (F=3.856 df=390 p≤0.05). Multiple visits group presented a higher level of agreement on this proposition (2.88) compared to the first-time group (2.66). Likewise, the multiple visits group (2.90) showed a higher agreement on the proposition of '*The external buildings devalue the garden's scenery*' compared to the first-time visitors (2.63) (F=6.220 df=389 p<0.05). In this sense, the participants who previously had visited Hama-rikyu Gardens are likely to be closer to the idea of high-rise buildings affect the garden negatively. Concordantly, multiple visits group (3.5) presented a higher disagreement level on the proposition of '*The combination of the traditional garden and the modern buildings at the background is attractive for me'* compared to the first-time visitors (3.7) (F=6.054 df=389 p<0.05). Moreover, the multiple visits group (3.8) showed a higher disagreement on the proposition of '*This garden is a good representative of traditional Japanese garden'* compared to the first-time visitors (3.6) (F=7.341 df=389 p<0.01). Moreover, once again, the multiple visits group showed a higher disagreement level compared to the first-time visitors on the propositions of '*The external buildings are a symbol of economic development'* (F=4.827 df=389 p<0.05) and '*the external buildings symbolize the modernism'* (F=4.441 df=389 p<0.05).

Attitudes towards the propositions according to visits to traditional Japanese gardens: Propositions were sorted by the previous visit to any other traditional Japanese gardens (Table 7.30).

Table 7. 30. One-way ANOVA for a visit to traditional Japanese gardens and propositions

		N	Mean	Std. Deviation	df	F	Sig.
5. The combination of the traditional garden and the modern buildings at the background is attractive to me.	Yes	337	3.6261	1.02483	387	5.625	.018
	No	52	3.9808	.85154			
22. The external buildings are awe-inspiring.	Yes	335	2.8507	.85566	384	9.116	.003
	No	51	3.2353	.78964			

Results present that there are two propositions which have significantly different agreement level by the two groups (first-time visitors to a Japanese garden; multiple visits done to Japanese gardens). On the proposition of '*The combination of the traditional garden and the modern buildings at the background is attractive for me*,' multiple visits group (3.63) presented a higher level of disagreement compared to the first-time visitors (3.98) (F=5.625 df=387 p≤0.05). Likewise, multiple visits group (2.85) showed a higher disagreement level on the proposition of '*The external buildings are awe-*

inspiring' compared to the first-time visitors (3.23) (F=9.116 df=384 p<0.005). In this sense, the participant who had visited any other traditional Japanese gardens are more likely to dislike the surrounding high-rise buildings.

Attitudes towards the propositions according to nationality: In the last analysis, the propositions were sorted by the nationality variable (Table 7.31).

Table 7. 31. One-way ANOVA for nationality and propositions

		N	Mean	Std. Deviation	Std. Error	df	F	Sig.
1. The combination of external buildings and the traditional garden is inappropriate	Japanese	261	2.9770	.99201	.06140	389	42.124	.000
	Foreign	130	2.2692	1.06231	.09317			
2. The external buildings devalue the garden's scenery.	Japanese	260	2.8962	.99068	.06144	388	19.061	.000
	Foreign	130	2.4154	1.09108	.09569			
4. The external buildings have a negative impact on the garden's scenery.	Japanese	259	2.8919	1.00188	.06225	387	23.384	.000
	Foreign	130	2.3538	1.09871	.09636			
5. The combination of the traditional garden and the modern buildings at the background is attractive to me.	Japanese	260	3.5462	.99893	.06195	388	12.452	.000
	Foreign	130	3.9231	.98528	.08641			
10. It is not easy to focus on the garden's scenery because of the external buildings.	Japanese	260	2.6846	1.05109	.06519	388	15.796	.000
	Foreign	130	2.2385	1.03282	.09058			
11. The external buildings create a sense of oppression.	Japanese	260	2.8808	1.08215	.06711	387	29.955	.000
	Foreign	129	2.2636	.97243	.08562			
12. This garden looks like a modern urban park rather than a traditional garden due to the external buildings.	Japanese	261	3.1954	1.08315	.06705	388	4.012	.046
	Foreign	129	2.9612	1.09261	.09620			
14. It would be better if the external buildings were covered by green walls (plants).	Japanese	261	2.4674	1.03955	.06435	389	22.476	.000
	Foreign	130	3.0154	1.14786	.10067			
15. The external buildings damage the historical atmosphere of the garden.	Japanese	261	2.7663	.98984	.06127	387	8.751	.003
	Foreign	128	2.4531	.96277	.08510			
16. The external building views create an eyesore.	Japanese	260	2.6231	1.02302	.06344	383	12.215	.001
	Foreign	125	2.2480	.90390	.08085			
19. There is a loss of character in this garden because of the external buildings' visual intrusion.	Japanese	261	2.6054	.92892	.05750	384	5.243	.023
	Foreign	125	2.3760	.90397	.08085			
22. The external buildings are awe-inspiring.	Japanese	261	2.7586	.81286	.05031	385	23.804	.000
	Foreign	126	3.1984	.86736	.07727			

Results show that there are twelve different propositions which have significantly different agreement level by nationality (Japanese; foreigner). The proposition of '*The combination of external buildings and the traditional garden is inappropriate*' is significantly different regarding the agreement level between Japanese and foreign participants ($F=42.124$ $df=389$ $p<0.001$). Japanese participants (2.98) presented higher agreement on this proposition compared to the foreign participants (2.27). On the agreement level regarding the proposition of '*The external buildings devalue the garden's scenery*', Japanese participants (2.90) showed a higher agreement compared to the foreign participants (2.41) ($F=19.061$ $df=388$ $p<0.001$). Likewise, the other propositions on which Japanese participants presented a higher agreement level compared to the foreign participants are '*The external buildings have a negative impact on the garden's scenery'* ($F= 23.384$ $df=387$ $p<0.001$); '*It is not easy to focus on the garden's scenery because of the external buildings'* ($F= 15.796$ $df=388$ $p<0.001$); '*The external buildings create a sense of oppression.'* ($F= 29.955$ $df=387$ $p<0.001$); '*This garden looks like a modern urban park rather than a traditional garden due to the external buildings'* ($F= 4.012$ $df=388$ $p<0.05$); '*The external buildings damage the historical atmosphere of the garden'* ($F= 22.476$ $df=389$ $p<0.001$); '*The external building views create an eyesore'* ($F= 12.215$ $df=383$ $p\leq0.001$); '*There is a loss of character in this garden because of the external buildings' visual intrusion.*' ($F= 5.243$ $df=384$ $p<0.05$). On the other hand, foreign participants presented a higher agreement level on the propositions of '*The combination of the traditional garden and the modern buildings at the background is attractive for me'* ($F= 12.452$ $df=388$ $p<0.001$); *'It would be better if the external buildings were covered by green walls (plants)'* ($F= 22.476$ $df=389$ $p<0.001$); *'The external buildings are awe-inspiring'* ($F= 23.804$ $df=385$ $p<0.05$).

7.4. Discussion

Results which were derived by factor and comparative ANOVA analysis clearly showed that the existence or absence of the high-rise buildings in the garden's scenery significantly affects the landscape preferences. The sequence according to the mean scores of each photo presents a whole picture for the preferences. It shows that the most liked sceneries are free from building intrusion. This situation was supported by the comparison between two groups (original photos and simulated photos) by revealing that the sceneries without buildings were significantly more liked. Furthermore, the categorization of the preferences done by factor analysis displayed consistent groups which contain the sceneries without buildings and the sceneries with buildings. The comparison of the factors supported that the respondents preferred unspoiled sceneries over the ones with buildings. Among the factors, the most preferred one was the view of hills which is a unique feature of the garden whereas the least liked one was the view of fields in which the photos were free from buildings. The reason why the fields were the least preferred one although they did not have buildings in their sceneries became evident when the comparisons between the photo pairs were investigated. Comparative analysis between photo pairs showed that only one simulated photo was significantly less liked compared to its original version. This photo presented an empty field which was lack of a focus. According to Kaplan et al. (1998), such scenes with little to focus on creates an impression of sameness so that they are low in preference. In this case, the buildings in the background of a field become the focus of the scene which is the reason why the original photo was preferred over its simulated version. When the other photo pairs that showed a significant difference regarding preferences were examined, it was seen that the simulated versions without buildings were significantly preferred over the original photos with buildings. The common feature of these five sceneries was the water element. Besides, the most liked photo (Photo 1) by the mean score had the scenery of a water element. This finding reveals the positive effect of the presence of water on visual preferences which has been proven by previous studies which indicated that the landscapes which contain water element are preferred over the ones without water (Kaplan et al. 1998; Kaplan and Kaplan 1989). The comparisons between the photo pairs showed that when buildings enter the scenery, the preference gets lower regardless of the presence of water element. This situation is considered as an indication of the negative impact of the buildings on the overall scenery of the garden.

Another commonality found in the photo pairs in which significant preference difference occurred was the characteristic of high-rise buildings in their sceneries. When the original photos (with buildings) of these pairs were examined (Photo 26; 21; 8; 12; 13; 3), it was seen that all these sceneries had the view of *Shiodome* high-rise redevelopment's buildings at their background. In other photos which face to *Takeshiba* side's high-rise buildings or *Kachidoki* side's high-rise buildings, the preferences again took part of simulated photos without high-rise buildings according to the mean scores. However, the preference differences between the original photos and simulated ones were not significant in those cases. In this sense, it can be argued that Shiodome high-rises are the most effective ones in the visual quality of the garden as the visitors presented their preferences towards the photos without the high-rise buildings of Shiodome significantly.

As aforementioned, the most preferred landscape among 30 photos was Photo 1. Taken from the skirts of Mt. Fujimi (an artificial hill), this photo presents a scenery of Dai-sensui pond and Nakajima teahouse which is similar to the scenery which is experienced atop of Mt. Fujimi. This photo was followed by Photo 16 which was actually taken from the top of Mt. Fujimi. Likewise, Photo 24 presents the scenery from atop of the same artificial mountain. As might be recalled, the scenery of Mt. Fujimi had found to be the most preferred one in the previous surveys (see Chapter 5). The preliminary study's results had demonstrated that there was a significant difference between the landscape preferences and the liking degree of the buildings which was observed dramatically in the case of Mt. Fujimi. According to that result, it was hypothesized that the high-rise buildings might damage the garden's scenery by obscuring the possible distant sceneries. By using photomontage technique, the results of the present survey supported the previous hypothesis by revealing that when the high-rise buildings were omitted from the scenery of Mt. Fujimi, the landscape preferences were increased to the point where the actual sceneries with high-rise buildings were significantly less preferred than the simulated ones without buildings. Hence, the present survey's results vividly demonstrated the negative impact of high-rise buildings on the garden scenery. Furthermore, visitors' perception implied that the high-rise building views hinder the possible aesthetic experience which could be taken from atop Mt. Fujimi.

Multiple regression analysis for the investigation of landscape elements' effect on the landscape preferences demonstrated another consisting finding which supported the preliminary study. Results indicated that the measured or assessed building ratio in a scene was not a significant indicator of preferences. This situation can be interpreted in a way that when the high-rise buildings enter a scenery, that landscape is less preferred regardless of the building ratio in it.

When the effect of respondents' socio-demographic characteristics on landscape preferences was examined striking results were found. Considering the effect of age variable, older age groups presented a significantly consistent perception towards the high-rise buildings. According to the results of both regression analyses, older age groups significantly preferred the sceneries without buildings over the sceneries filled with buildings. This result once again supports the preliminary study in which it was found that older age groups had a negative attitude towards the high-rise building intrusion into the garden's scenery. This situation may be explained by the fact that the older age groups may have a traditional approach and that they may yearn for the old times when the urban sceneries were more serene.

Another important finding derived from the regression analysis was that the female respondents significantly preferred sceneries without buildings. The perception of the female observers towards the high-rise building intrusion became clearer with the following ANOVA tests. The photos which were extracted by the analysis showed a vivid commonality of having high-rise buildings in the sceneries, and these photos were preferred significantly less by the female respondents. The findings of the previous two empirical studies (see Chapter 5 and Chapter 6) were also in line regarding the female observers' perception. In the empirical study on prospect-refuge theory, female respondents' landscape preferences had sided with the open sceneries where more natural feeling could be experienced. Furthermore, the preliminary study had indicated that female respondents' agreement level on the proposition of '*buildings at the background should be lower…*' was significantly higher compared to the male respondents'. In this sense, it can be deduced that female observers are significantly more sensitive towards the high-rise building intrusion. In fact, this result echoes to the landscape preference studies in which females had a negative stance towards human-intrusion into natural-views, and they preferred natural scenes significantly higher than males (Strumse 1996). The findings of the study regarding female respondents' perception were also consistent with the experiment results of Arifin (1998) in which the female students displayed a higher preference for the unspoiled views without buildings.

When the difference between nationality groups was examined, both regression and ANOVA analyses results point out to the fact that the Japanese respondents had a lower preference for the garden's scenery in general regardless of the landscape elements in the sceneries. This finding was consistent with the previous empirical study's results (see Chapter 5). In parallel with Nasar (1984)'s statement, locals

(Japanese respondents in this case) presented lower preference rating compared to the foreign respondents.

ANOVA tests resulted in an interesting finding regarding the socio-demographic characteristics of the respondents. Results demonstrated that the respondents who hold lower-level educational status (junior high school, high school) significantly less liked the sceneries which had high-rise buildings compared to the respondents who hold a higher level of educational status (Master's, Ph.D.). Based on this, it can be deduced that more complex educational status causes a higher landscape preference for the sceneries with high-rise buildings. In fact, this result supports the findings of the preliminary survey that had a similar result where the respondents who had the highest educational status found the high-rise buildings more pleasing compared to the lower level education holders.

When the landscape preferences were examined according to the number of visits to traditional Japanese gardens, it was observed that the respondents who visited a traditional Japanese garden for the first time tended to display a higher preference rating for the sceneries with buildings. On the other hand, the respondents who visited these gardens before displayed a preference for the simulated photos significantly higher.

For the related occupation variable in socio-demographic characteristics, ANOVA tests yielded a simulated photo without buildings which was significantly more preferred by the respondents whose occupation is related to design disciplines.

Linear regression analyses which were carried out to investigate the extent of the propositions regarding the garden's scenery and high-rise buildings on landscape preferences for the photos resulted in a detailed explanations for the preferences. When the relationship between the propositions and the simulated photos were examined, the results showed that the people who agreed with the statements about the negative effect of high-rise buildings such as '*the external buildings devalue the garden's scenery'*; '*the external buildings dwarf the garden elements'; 'the combination of external buildings and the traditional garden is inappropriate'; 'the external buildings create a sense of oppression'; 'there is a loss of character because of the external buildings' visual intrusion'* tended to prefer simulated photos without buildings or their preference level for the original photos decreased. The positive relationship between the proposition of '*I wish could see natural elements in the far distance rather than the high-rise buildings,'* and the photos without buildings indicated the people's desire to have a broader prospect of distant landscapes. Concordantly, the agreement level on the proposition of '*external buildings symbolize the modernism*' affected the preferences for the simulated photos. This situation indicated that people who perceived the high-buildings as a representative of modernism might tend to prefer the garden sceneries without buildings. In this sense, this finding can be interpreted that the visitors subconsciously did not like the juxtaposition of traditional and modern. On the other hand, the agreement level on the proposition of '*the external buildings are a symbol of economic development*' affected the preferences for the simulated photos in a negative way. In accordance, the positive attitudes towards the high-rise buildings such as '*the external buildings are awe-inspiring'*; '*the combination…is attractive*…' advanced the preferences for the original photos with buildings at the background.

When the visitor attitudes towards the propositions regarding the garden's scenery and high-rise buildings were examined, the mean and frequency ratings were remarkable since the majority of the visitors exhibited a high degree of disagreement on the propositions related to the negative effect of high-rise buildings. This discrepancy between the results of visual stimulus and verbal stimulus refers to an important fact which is often encountered in environmental psychology studies. Smith (1977) indicated that the limbic system of the human brain is the center of all emotions. The limbic system consists of the brain's left and right hemisphere. The left hemisphere is for rational, verbal, mathematical, logical, analytical, and deductive thought, and the right hemisphere is for thoughts that are holistic, intuitive, or spatial, and for pattern-recognition (Cheng 2007). Current literature on environmental psychology and landscape preference studies emphasizes the importance of visual stimulus over verbal scales, as the reflection of visual stimulus is more viable (Kaplan and Kaplan 1989).

ANOVA tests on the propositions subsequent to the factor analysis for the extraction of hypothetic categories revealed that there was a higher level of agreement on the positive aspects of high-rise buildings compared to their negative aspects. On the other hand, above these categories, the respondents exhibited a high level of agreement on the propositions related to the garden's identity. Subsequent correlation analysis to investigate the effective attitudes on the identity indicator demonstrated some explanatory results. For instance, the correlation between the proposition of '*I feel untouched nature in this garden,*' and the identity indicator showed that, as the agreement on garden's natural essence increased, the agreement on the garden's unique identity which is being a traditional Japanese garden also increased. Besides, the agreement level on the propositions of '*this garden looks like a modern urban park rather than a traditional garden…*' and '*it is not easy to focus on the garden's scenery because of the external buildings*' reduced the agreement on the identity indicator. This situation implies that the conspicuousness of the high-rise buildings results in an imbalance in the traditional atmosphere of the garden.

On the other hand, the results which demonstrated the positive correlation between the identity indicator and the propositions of '*The combination of the traditional garden and the modern buildings at the background is attractive for me*'; '*This garden is a good representative of Tokyo's urban image*';

‘*The external buildings symbolize the modernism*’ drew attention to another fact. In this sense, it can be deduced that whether people have opponent attitudes or supportive attitudes towards the high-rise buildings, both sides exhibited a high consensus of agreement on the garden’s identity. Frequency results also support the idea that the garden is a good representative of Japanese gardens and the attitudes towards the buildings do not significantly reduce its perceived identity.

When the effect of socio-demographic characteristics on the propositions’ agreement levels was examined, the gender variable, once again, presented consistent and significant findings. The results demonstrated that female participants were likely closer to the idea that the high-rise buildings devalue the garden’s scenery. As might be recalled, previous analysis on the relationship between preferences for the photos and gender differences, female participants had preferred the photos with high-rise buildings significantly less compared to the male participants. Furthermore, a similar condition was observed regarding the preferences for the simulated photos in which the female participants exhibited a significant preference for the photos without buildings. Thereby, once again it was proven that the female observers are more sensitive to the negative visual effects of the high-rise buildings on the garden’s scenery.

Another socio-demographical finding which was consistent and significant was the effect of income level. As it was observed in the landscape preferences in visual stimulus, high-income level holders tended to prefer the scenes with buildings more compared to the lower level income holders. Accordingly, lower income holders exhibited a significantly higher level of agreement on the propositions which are related to the negative effect of the high-rise buildings on the garden. These results can be interpreted in a way that the high-income group most possibly live in metropolitan areas or cities where the most prosperous job opportunities can be found. This living conditions may set the people to have a comparatively positive view towards the high-rise building views as they represent the economic power which the high-income holders can feel attached to.

Along with the preferences for the visual stimulus, the attitude towards the verbal scale in accordance shows a specific pattern according to the number of visits to Hama-rikyu Gardens or any other Japanese gardens. The participants who visited Hama-rikyu Gardens presented a significantly greater tendency to the negative effect of high-rise buildings on the garden compared to the people who visited the garden for the first time. On the other hand, first-time visitors exhibited a greater level of agreement on the propositions indicating the positive aspects of the high-rise buildings such as attractiveness. In this sense, it is thought that the glamorous images of the high-rise buildings may be attractive and exciting for the first glance, on the other hand, as one gets more involved with the garden by visiting multiple times and receiving in-depth knowledge about the garden such as its history, the high-rise buildings surrounding the garden starts to lose its 'awe-inspiring' influence and becomes an unwanted element which damages the visual quality of the traditional garden.

ANOVA analysis regarding the comparison between the attitudes of Japanese respondents and foreign respondents towards the propositions demonstrated a striking phenomenon. The results indicated that Japanese respondents' agreement level on the propositions regarding the negative effect of high-rise buildings on the garden's scenery was significantly higher than the foreign respondents. Accordingly, the foreign respondents exhibited a significantly higher level of agreement on the propositions related to the positive attributes of the high-rise buildings such as attractiveness and being awe-inspiring. This result disproved the findings of the previous study (see Chapter 5) in which it was found that the Japanese visitors' landscape preferences were in a positive relationship with the building ratio compared to the foreign respondents. Antithetically, however, the present survey's results exhibit a negative attitude of

Japanese people in comparison with foreign visitors. This finding can be interpreted in relation to the ethics of stewardship or place attachment. Being an essential concept in environmental psychology studies, place attachment is described as the emotional bond between person and place (Florek 2011). Place attachment is multi-dimensional, and there are various factors to affect the bond between person and place (Scannell and Gifford 2010). Recent research results show that in touristic locations, local people tend to establish a higher level of place-attachment than the tourists (Silva et al. 2014). Based on this information, Japanese people may possibly have a special emotional bond with the traditional garden that reflects the cultural and aesthetic vision of their ancestors. This situation may lead Japanese visitors to feel their cultural roots while they are in the garden. Such a feeling may produce a sensitivity to the proper protection of their culture, and therefore they can have adverse feelings towards the high-rise building intrusion. However, this interpretation should be supported by further research which considers the human behavior in place-attachment level.

7.5. Conclusion

This chapter defined the effect of modern high-rise buildings on Hama-rikyu Gardens in the context of user perception by questionnaire applied on site with the garden visitors. Results showed a consisting finding; the absence or presence of the external high-rise buildings significantly affect landscape preferences. When the buildings are involved in the garden’s scenery, landscape preferences significantly decrease. Results indicate that cultural attributes are also effective regarding the attitudes or perceptions for the negative effect of high-rise buildings. According to results, gender, age, educational status, and income level are the most apparent indicators of landscape preferences.

CHAPTER 8.

CONCLUSION

8.1. Review of Findings and Research Implications

The first quantitative research of this study (see Chapter 5) demonstrated that the Western concepts of environmental aesthetics can also explain the aesthetic experience in Japanese gardens. One of the evolutionary approaches in environmental aesthetics theories to explain landscape preferences, namely, prospect-refuge theory, was tested in Hama-rikyu Gardens, and supportive results were found. The in-situ survey results showed that the locations that have open views and refuge-related features are the most preferred ones. This finding shows that prospect-refuge theory can be considered a valid explanation for landscape preferences in Japanese gardens, particularly in strolling type ones.

Although many researchers have concentrated on the refuge-related aspects of Japanese gardens (Appleton 1975a; Kaplan et al. 1998; Inagami 2013; Inagami 2014), this research emphasized the importance of the prospect aspect in a traditional Japanese daimyo garden. Today, despite the fact that the prospect aspect of this garden has decreased due to the presence of surrounding high-rise buildings, this grand-scale garden is still perceived as open, especially from atop the artificial hills referred to as 'shakkei points.' Apparently, previous designers of Japanese gardens had a deep understanding of scenic characteristics and organized the sites around points from which distant scenery could be viewed. Consequently, these sites are still the most preferred ones in the garden. The results implied that the aesthetic experience derived from the borrowed scenery *(shakkei)* technique can be explained by prospect-refuge theory. However, this study was insufficient to explain the effect of surrounding high-rise buildings on the prospect-related aspects of the garden including distant borrowed sceneries.

The visual effect of high-rise buildings was tested in two different conditions. The first attempt was the preliminary study (see Chapter 6) which was conducted with the respondents who were required to assess the landscapes by looking at real scenes on the site. The second study (major survey), on the other hand, made use of simulations by printed photographs (see Chapter 7). Appleyard (1997: 65) states that "*the comparison of responses to simulations with responses of equivalent groups to real situations is the ultimate test of realism.*" In the present study, as it is presented in the major study on the visual effect of high-rise buildings, there were supportive, and subsidiary findings to the hypotheses had arisen in the preliminary study. This situation represents that using photos as surrogates of real environments can reliably contribute to landscape preference studies. Furthermore, the present study showed that using photomontage images to examine human perception for the environments where the questioned condition is infeasible in reality, can enable the related studies such as the study areas of environmental behavior and environmental psychology to investigate landscape preferences in detail.

The negative effect of high-rise buildings on the prospect character of the garden and relatedly on its bygone borrowed sceneries became clear by the results of the last/major survey in which the photomontage technique was applied. In the case of one of the artificial hills (Mt. Fujimi) where one could command distant sceneries such as Mt. Fuji before the high-rise buildings were erected, visitors significantly preferred the simulated version of the scenery from which the high-rise buildings were deleted. Furthermore, people presented a high consensus of agreement on the proposition of *'I wish I could see distant views such as Mt. Fuji… instead of high-rise buildings'* which referred to a demand for borrowed sceneries. Based on the consistent results, it can be stated that the first hypothesis of the thesis (*the intrusion of high-rise buildings into the heritage gardens' scenery causes an impairment in their prospect aspect. Therefore, the prospect-refuge theory cannot be experienced as possible as it could be* *when the buildings did not surround the gardens*) has been proven.

Regarding the affective appraisals, results indicated a significant difference in the assessment of some photo pairs (simulated-original). This difference was significant at the adjective pair of 'natural-artificial.' The simulated version of the photos from which the high-rise buildings were omitted was perceived as more natural while the original photos which represent the current situation of the garden were perceived as artificial. Accordingly, the simulated version by the effect of having a natural-look was preferred over the original one. This situation echoes to the second hypothesis of the thesis which is '*the high-rise buildings jeopardize the natural essence which was sophisticatedly given to these gardens in their original designs. It is, therefore, hypothesized that this dualism between the inside and outside causes a shift in the attitudes or emotions of their observers in terms of affective theory*.'

Another finding which emphasized the importance of preferability of natural-look was the significant correlation between the garden's identity and to be able to feel nature in the garden. This situation implied that as the natural essence in the garden increased, the identity of the garden would be distinctive in human perception. Keeping in mind that the sceneries without buildings were significantly preferred over the original ones and the sceneries without buildings were perceived significantly more natural, it can be argued that the present high-rise buildings implicitly damage the garden's identity by jeopardizing the natural essence. Therefore, by looking at the reflection of human perception derived from the visual stimulus, it can be said that if the garden's scenery was not spoiled by the surrounding high-rise buildings, the garden's identity would be perceived more distinctive. In this sense, the last hypothesis of the thesis can be addressed (*due to symbolic meanings such as modernism or economic power, the surrounding high-rise buildings causes an ambiguity for the spatial context of the historic gardens. In this sense, it is hypothesized that genius loci or identity of the gardens are affected by these* *modern developments*). However, the visitor responses to the verbal stimuli exhibit some contradictory findings, as most people agreed on the identity indicator-proposition which is '*this garden is a good representative of traditional Japanese gardens,*' (mean value: 3.76) and the majority indicated that they could feel untouched nature in the garden (mean value: 3.01). In this sense, although it seems to be not possible to strongly emphasize the impact of high-rise buildings on the place identity, assessments for another variable related to identity issue worth to discuss. Results indicated that there was a consensus on the proposition of '*this garden looks like a modern urban park rather than a traditional garden due to external buildings*' with a mean value of 3.11. Also, this proposition was significantly correlated with the identity indicator at the negative direction. This situation supports the hypothesis that the surrounding buildings damage the garden's historical/traditional identity by their modern-look.

8.2. New Research Questions and Recommendations for Future Research

The results of the major survey, in fact, point out a consistent phenomenon. Although the verbal stimulus of the study, which can be considered as cognitive assessment, exhibited some contradictory results, the visual stimulus yielded striking results by displaying visitors' visual landscape preferences. A variety of analyses revealed that the sceneries that are free from buildings were significantly preferred over the current situation of the garden whose surroundings are densely filled with modern high-rise buildings. In this context, although a majority of people cognitively implied that the high-rise building intrusion is not a negative effect on the garden's scenery, the findings derived from the visual stimulus raise concern about the fact that the high-rise buildings causes a negative impact on the aesthetic experience of people, as their subconscious significantly preferred the photos from which the buildings were omitted.

As it was discussed in Chapter 7, responses to visual stimulus occur subconsciously reflecting the ideals and desires of human by thoughts that are more intuitive. On the other hand, responses to verbal stimulus require a more conscious thought which is rational, logical and deductive. Thereby, the findings of this research point out the possible contradistinction between consciousness and subconsciousness. The results regarding the landscape preferences for the photos (visual stimulus) indicate that subconsciousness leads human to prefer the natural-looking sceneries which are not spoiled by high-rise buildings. On the other hand, the results regarding the attitudes towards the propositions (verbal stimulus) exhibit that consciousness leads human to accept the reality of modern urban space not to be neglected from modern society. This situation, in fact, refers to the dilemma of the modern human. In other words, while inner person desires for a natural environment, socio-cultural conditions oblige human to the built environment. Constituting a basis for this phenomenon, the high agreement on the proposition of '*I wish I could see natural elements in the far distance (such as Mt. Fuji, Mt. Tsukuba, the ocean) rather than the high-rise buildings*' refer to the instinct will of people. Based on this interpretation on the results, it is suggested that future studies in related disciplines such as environmental psychology and environmental behavior may investigate the inconsistency between the given responses to visual and verbal stimuli to explain underlying reasons of people's landscape preferences.

Moving forward from the verbal stimulus of the major survey, investigations on some propositions that have significant correlations with the identity indicator other than the ones mentioned above may lead to new research questions. For instance, the propositions of '*this garden is a good representative of Tokyo's urban image'*, '*the combination of the traditional garden and the modern buildings at the background is attractive for me'*, and '*the external buildings symbolize modernism*' were found to be in significant correlation with the identity indicator at the positive direction (see Table 7.26).

According to these results, at first glance, it may seem to be that the garden retains its unique identity even though people have supportive attitudes towards the high-rise buildings. However, these correlations may also be the sign of another phenomenon. If we recall the expert interviews (see Chapter 4), DT had expressed the effect of surrounding buildings on the gardens by stating that "*The contrast of the modern buildings and the historic garden is odd. 'Well, this is Tokyo!' kind of impression."* From this point of view, the correlations above raise a concern about how the garden's identity is perceived by the observers. Since the garden is located in the city center, in the middle of a business district, do people consider and accept its identity as a mixture of modern and traditional, just like it is the case for Tokyo's image? In order to answer such a question, future research may consider identity-related variables with more comprehensive attitude scales for more in-depth investigations on the common thought.

In the context of evolutionary-based assessments, the study has consistent findings that landscape preferences may vary according to landscape characteristics. The results of comparative analysis (see Table 7.3) between each photo pairs (original and simulated) yielded a significant difference between six photo pairs in which the simulated versions were preferred over the original photos in five photo pairs whereas the opposite was the case for only one photo pair. As it was discussed in Chapter 7 (see p. 195), the reason why the original photo with dense high-rise buildings at the background was liked more than its simulated version can be the effect of focus concept. Concordant with the related literature (Kaplan et al. 1998), the simulated version of this photo pair represented an empty and vacant landscape, and such landscapes are less favored due to lack of a focus element. In this context, it can be said that the high-rise buildings become to be in interest as a landmark in such landscapes so that their existence may be preferable in such 'empty and vacant' landscapes. On the other hand, investigations on the other five photo pairs in which significant preference differences occurred may point out another phenomenon. The original versions of these photo pairs represent the contrasting effect of the combination of traditional and modern in the same scene. From this point of view, it can be argued that when the modern high-rise buildings enter the garden's scenery where one can also have a view to traditional garden elements such as teahouse and pond, the buildings may become unwanted elements in the whole scenery, as the respondents significantly preferred the simulated versions of these photos. In this context, the effect of the contrast between modern and traditional on landscape preferences may be investigated in further studies with comprehensive stimuli in which a variety of modern and traditional elements can be found in the same frames.

The results also demonstrate the importance of cultural variables in the aesthetic and cognitive assessments of landscapes. The analyses of the socio-demographic background's effect on the preferences present some consistent findings indicating that some socio-demographic groups assess the high-rise building intrusion more negatively in both visual stimulus and the verbal stimulus. In the light of the current findings, it can be stated that the female respondents, the lower level income holders, older age groups and lower level of education holders have a negative perception for the high-rise building intrusion. In this context, it seems to be necessary to establish a comprehensive theory which would explain cultural and evolutionary aesthetics in a single order to understand the human perception and preference in a holistic way. By such a theory and its implementation, it might be possible to create high-quality urban and built environments that satisfy the aesthetic needs of the users.

Considering the facts that the female respondents presented a significantly higher preference for the simulated photos; significantly lower level of preference for a group of photos in which all of them had high-rise buildings at their background; and exhibited a significantly higher level of agreement on the propositions about the negative effect of buildings, female observers are more sensitive towards the visual effect of high-rise buildings and perceive these views as obtrusive. The high-rise buildings, in fact, have been often considered as a masculine sense of beauty or masculine urge to dominate (Parker 2015). Lefebvre (1991:98) emphasizes the masculine violence symbolism embedded in the architecture of high-rise buildings by stating that "*The arrogant verticality of skyscrapers, and especially of public and state buildings, introduces a phallic or more precisely a phallocratic element into the visual realm; the purpose of this display, of this need to impress, is to convey an impression of authority to each spectator. Verticality and great height have ever been the spatial expression of potentially violent power*." In this sense, the results of this study about the preference differences between the gender groups remark to another phenomenon and a new research question. Considering that the female participants of the present study exhibited a remarkable and consistent attitude against the negative effects of high-rise buildings, the underlying reason for this significant difference may be a reaction to the contemporary urban structure that emerged as a result of the male-dominated conception which has been frequently criticized by feminism. In this regard, the use of feminist theory may expand horizons for future studies in related subjects and may help to establish more livable environments.

Besides, the fact that lower level income holders' opponent attitude towards the high-rise buildings in both perceptual (visual stimuli) and cognitive assessments (verbal stimuli) draws attention to another issue and raises an interesting research question. In this context, it can be argued that the low-level income holders possibly do not have a relationship based on self-interest for the symbol of the economic development of high-rise buildings. This situation may be related to the concept of disinterestedness that may cause low-level income holders' perception to be concentrated on the value of the traditional garden's scenery whereas the opposite may be the case for the high-income holders who presented a higher level of preference for the scenes with buildings. Regression analysis (see Table 7.22) supports this hypothesis by revealing that the proposition of '*the external buildings are a symbol of economic development*' affects the preferences for the simulated photos at negative direction. This situation implied that if one believes in the economic profit of the high-rise buildings, their preference for the photos without buildings decreased. However, the data collected in the present survey is not efficient to make a definitive judgment on this issue. Therefore, it is recommended that future studies may focus on the disinterestedness dimension in the cognitive and perceptual judgments of users in the context of cultural interest. By this way, the concept of disinterestedness may be enriched, and it may be possible to create a more coherent judiciary on similar issues.

This study had some limitations as it focused mainly on the relation between the garden and the external high-rise building views so that it did not consider the physical attributes of the buildings in detail. Therefore, it is advised that future studies on this issue should consider the physical characteristics of the buildings with a broader approach and gain more data about their formal aesthetic attributes and symbolic meanings.

This study was limited to demonstrate a precise relationship between the borrowed scenery (*shakkei*) technique and prospect-refuge theory in the aesthetic experience of the observers, as the surrounding high-rise buildings obscure the distant views. Nevertheless, this study, theoretically, defends the hypothesis that the borrowed scenery (*shakkei*) accommodates the observer to experience a balanced level of prospect and refuge and thus enhances the landscape preferences. This study's visual stimuli are limited with simulated photos with an empty sky and original photos with buildings at the background. Therefore, the future study may examine the relationship between borrowed scenery technique and prospect-refuge theory in the context of landscape aesthetic experience of the observer at the settings where the distant sceneries are preserved. On the other hand, for the cases such as Hama-rikyu Gardens from where to get a distant scenery is not possible due to the surrounding urbanization, future study may use simulated visual stimulus by replacing high-rise buildings with natural elements such as mountains to have a more direct explanation for the effect of high-rise buildings on the borrowed scenery technique.

It is widely known that seasonal change in landscapes has significant effects on human perception and preference (Kuper 2015). Since four seasons can be experienced in Japan and traditional Japanese gardens were carefully designed to be enjoyed in every season, the vegetative visual changes in each season result in a different taste and aesthetic experience. In this regard, future research may examine the effect of surrounding buildings on the garden's scenery by capturing the seasonal changes to see if vegetative visual changes would affect the human perception of high-rise building effect on the garden.

Future research may also consider the perception of the residences of the surrounding buildings on the issue as an approach in terms of participatory planning. As it was discussed before, today some people ascribe new meanings to the term shakkei. The comment of Shiodome high-rise project's architect indeed an interesting one by defining Hama-rikyu Gardens itself as the borrowed scenery which can be viewed from the windows of the high-rise buildings (in Akasaka 2014). This kind of attitudes is not limited with the statement of the architect: some real estate companies, too, promote their apartments on websites with a caption of '*Your Shakkei will be Rikugien* (another daimyo garden in Tokyo)' (Anonymous 2016d). On the other hand, there are some comments which consider the high-rise buildings views from inside the heritage gardens as borrowed scenery (Anonymous 2015a). Therefore, such a study may be interesting by examining the modern attitudes towards the term shakkei.

It is also suggested that future research should investigate the visual effect of external buildings on other heritage Japanese gardens in similar conditions to reach more comprehensive discussions and generalizable conclusions that would lead us to take actions for the issue.

8.3. Implications for Management and Urban Planning Authorities

Based on the results, it is deduced that the intrusion of high-rise buildings devalues the garden's scenery and its historical spirit, as both visitor judgments and expert opinions presented a consensus on the issue. Therefore, comprehensive planning actions should be undertaken to reduce the conspicuousness level of the buildings phase one phase. The findings showed that especially the north-west side of the garden where the Shiodome high-rise buildings stand is profoundly affected by the surrounding urbanization. In the short term, some actions such as ameliorating the views with green barriers may be applied to reduce the impact of the buildings. In the long term, when the buildings in the surroundings of this garden become deficient economically and physically in the future, the removal of these buildings and creating buffer zones on the surrounding of the garden would be an essential and necessary action for sufficient cultural heritage protection. In this sense, the city administration, landowners and garden management should seek sustainable solutions for the issue in the long term.

8.4. In conclusion

Since the spirit of globalization materialized in the form of high-rise buildings (Ptichnikova 2016), today, many cities in the world are suffering from the suppressing issues on historical urban landscapes especially when such buildings unsuitably sited without a careful consideration towards the historical, cultural and visual context of the place. To prevent or at least ameliorate the problems caused by new developments, organizations such as CABE (Commission for Architecture and the Built Environment) and English Heritage established some guidance on how to achieve more aesthetic and sustainable environments by proper urban planning applications (English Heritage 2007). Furthermore, they precisely emphasize that new developments must address their effect on the historic urban landscape settings. However, for the greater part, appropriate policies are not in place yet which cause the contradictory images in today's global cities.

To set a course for the conservation of historic urban landscapes and their views, citizen awareness and movement seem to be necessary as the prerequisite. There are some successful examples which can draw a picture to the power of the society if the citizens are determinant by sharing the same value. For example, in 1989, Wangari Maathai, a Kenyan environmental political activist, and her followers held a protest against the construction of a 60-story high-rise building adjacent to Uhuru Park in Nairobi. In spite of several rigor, the protest was successful to cancel the project (Hiltzik 1989). Also, in Chigasaki City (Kanazawa Prefecture), a group of citizens launched a movement called "Mt. Fuji Project" to conserve the view of Mt. Fuji which was threatened by a high-rise block development proposal. For the purpose of raising awareness on the importance of the Mt. Fuji view, they engaged in several activities such as postcard competition, workshops for children, publishing a map illustrating the observation points of Mt. Fuji. As a result of all the effort, they ultimately succeeded in stopping the construction of the high-rise building (Okamura 2018).

In the case of heritage gardens in Tokyo, the Metropolitan Government established a Landscape Plan in 1997 which was amended in 2017. This plan promotes necessary measures for conserving views from the gardens. Buildings over 20-meters-high within 100 m to 300 m. of the boundary of the gardens are subject to control in terms of height and design. However, since the surrounding areas were designated as commercial areas, landowners have the right to build high-rise buildings. Therefore, the Landscape Plan does not impose a direct restriction on building height, but rather offers guidance based on consultations such as controlling the color of the buildings and restrictions on outdoor advertisements on the buildings (Okamura 2018). In this sense, the views taken from the traditional gardens seem to be under the initiative of landowners, local governments and the private sector. Therefore, as the examples above demonstrate, conservation actions can come to life only if there is a high consensus among citizens depending on their awareness and support (Akasaka 2005; Okamura 2018). And, to achieve sustainable environments is only possible by the participation of stakeholders.

Whether beauty is ‘in the object’ or ‘in the eyes of the beholder’ is an enduring discussion in the philosophy of aesthetics. This study revealed that the interaction between the subject and object is essential in visual landscape preferences and emphasized the negative effect of the buildings on the garden’s scenery by visitor judgments. In this way, the findings of the previous studies on similar issues which were done by objectivists approaches were supported by a subjectivist approach by considering user perceptions. Therefore, it is expected that the results of this study will lead to a strong argument for the implementation of a visual conservation plan for this important heritage garden in the future.

In today’s highly economically oriented world, to find solutions to conservation actions, it is highly recommended that the studies should consider user needs and perceptions to raise the awareness towards the importance of cultural heritage sites. Such a collective awareness of the value of cultural heritage seems to be needed, as both discussions in the expert interviews and quantitative survey results have demonstrated. One of the interviewed experts (NE) bemoaned the cultural damage that is caused by the surrounding urbanism by stating that "*The buildings surround the gardens are very disgracing. How can be the Japanese aesthetic value found in such a space?*" Indeed, one of the unique and proud features of Japanese gardens has been the ambiguous boundaries between nature and human composition (gardens), in other words, a strong and balanced unity of *soto* (inside) and *uchi* (outside) (Fowler 2010) that represents the human-nature relationship in the traditional Japanese mind. Undoubtfully, the high-rise buildings which surround the daimyo gardens in Tokyo create a sharp boundary for the gardens by disconnecting them from nature and emphasize human intervention into the landscape, or in the bigger picture: human domination on nature. This situation can be interpreted in a way that the current urban planning schemes cause a profound dislocation from cultural inheritance in which human used to be seen as equal and a part of nature that differentiate Japanese culture from the Western.

In fact, activities such as '*Youhai*' (literally means viewing and praying – e.g.: worshipping Mt. Fuji from a distance) (Akasaka 2005) underlines the given importance to natural vistas and appreciation of nature in the roots of Japanese culture. However, it seems that today 'viewing and praying', in other words worshipping, is forced to be done towards the high-rise buildings which is a fact points out the underlying philosophy of neo-liberalism in which the 'capital' is the highest priority.

At this point, it should be noted that such artifacts like high-rise buildings are not the ultimate realities of humanity, as they are the products of globalization and capitalism which emphasize mere pragmatic ideologies. Cultural heritage sites like traditional gardens, on the other hand, does not have only economical values, but also social values such as collective memory, aesthetic visions and lifestyles of societies that shape the unique identities of today's landscapes. Therefore, even though the contemporary ideologies are sometimes overwhelming, it is worth to put a concentrated and continuous effort to preserve heritage sites to prevent from ‘placelessness’ and to have a precise link to who we actually are.

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APPENDIX 1. Expert Interviews

Semi-structured questionnaire

Place:	Date:
Interviewee:	Hours:

Introduction

The purpose of this interview is to understand how experts think about Shakkei technique and High-rise building effect on Daimyo Gardens in Tokyo. Any information will be greatly appreciated. Thank you for your cooperation.

*Information that you give will not be used for another purpose rather than the research. Your name will not be stated, and nicknames will be used during the research thesis writing.

General Information

1. How long have you been doing your profession?

2. How long have you been living in Japan?

Daimyo Gardens

1. Do you visit Daimyo Gardens?

2. When do you prefer to visit Daimyo Gardens?

3. How long do you spend in Daimyo Gardens?

4. What kind of impressions do you have about these gardens?

5. Do you think the management of Daimyo Gardens is sufficient?

6. Do you think these gardens are preserved well? Could you please explain why?

Shakkei and effect of high-rise buildings on the daimyo gardens

1. What is your thought on borrowed scenery (Shakkei) technique?

2. Do you think Shakkei technique is proper/practical for modern times, especially in the cities like Tokyo where urbanization reaches the highest limits? Could you please explain why?

3. What do you think about Daimyo gardens in the context of Shakkei?

4. Do you think these gardens had consciously planned borrowed sceneries when they were designed?

5. What do you think about the high-rise building effect on these gardens?

6. Do you think high-rise buildings devalue the scenic beauty of these gardens? Could you please explain why?

7. Do you think is there any positive effect of the high-rise buildings on the scenery of these gardens? Could you please explain why?

8. Do you think the visible high-rise buildings affect visitors' feelings about these gardens? Could you please explain why and how?

9. What is the main reason of the change in background views of these gardens?

10. Do you think it is necessary to control the surroundings of these gardens?

11 What should be planned to control the surroundings of these gardens?

12. Do you think it is possible to change the contemporary situation of the surroundings of these gardens in the future to reduce or completely extinguish the impact of high-rise buildings? Could you please explain how?

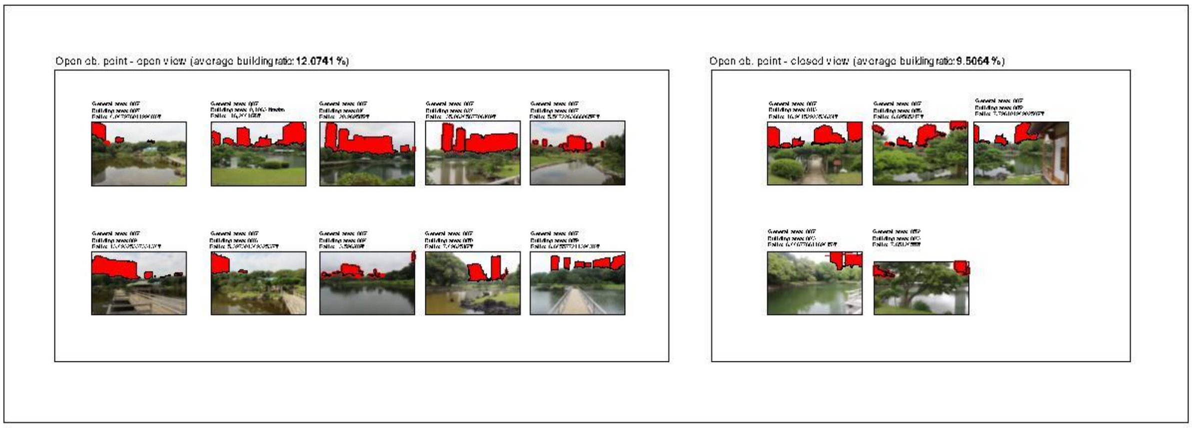
13. Do you think it is possible to obtain original Shakkei of these gardens again in today's Tokyo?

Hypothetic Discussion

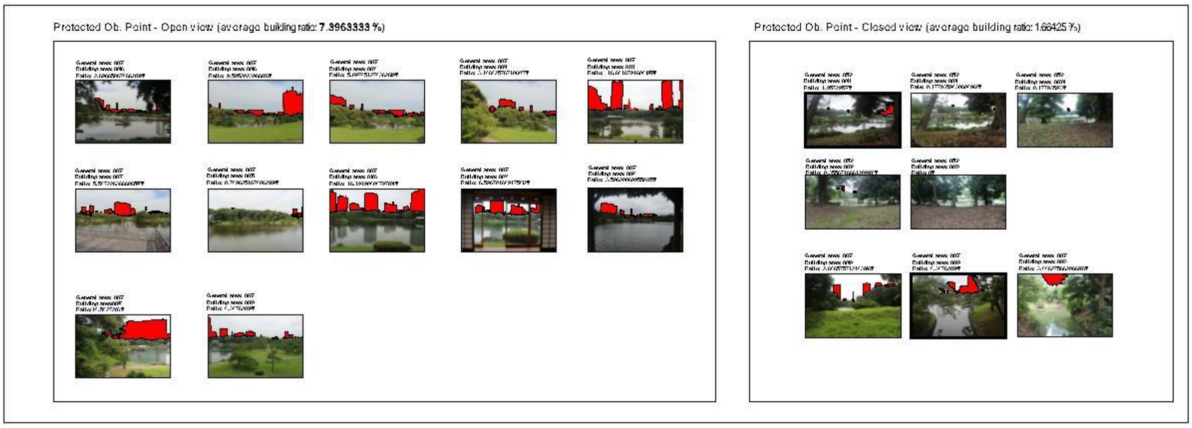
It is thought that Tokyo's spatial design is taken captive by Western landscape styles.
Is it proper to call this situation as 'Spatial Stockholm syndrome'?

APPENDIX 2. Calculation of Building Ratio

Open Observation Point



Protected Observation Point



APPENDIX 3. A Survey on Hama-rikyu Gardens' Observation Points

This survey is prepared by a Ph.D. student of Chiba University, Graduate School of Horticulture.

Thank you for agreeing to take part in this survey.

This study is carried out to determine the elements affecting individual's landscape preferences in the case of a traditional Japanese garden; Hama-rikyu Gardens.

There are various Landscape Aesthetics Theories developed about the preferences of individuals about their environments. One of these theories is Prospect-Refuge Theory. This study is carried out to identify the relationship between the principles of this theory and Hama-rikyu Gardens.

Your responses are voluntary and will be confidential. Responses will not be identified by individual. All responses will be compiled together and analyzed as a group.

You are free to quit the survey at any time or to indicate your desire not to use your answers.

There are no true or false answers to the questions asked in the survey.

There is no time limit for the survey. You are free to think as much as you want in the questions. However, it would be enough and worthwhile for us if you give the first answer in your mind.

You are asked to answer the questions in the survey by standing at the specific point and looking at the direction which is indicated.

If you have any question about the questionnaire, please feel free to ask.

Thank you in advance for your participation and support.

Buket Senoglu

Chiba University

Graduate School of Horticulture

Ph.D. Student

e-mail: buketsenoglu@chiba-u.jp

Supervisor: Prof. Isami Kinoshita

1. The most liked element in the scene is ……………………… because it is ………………………

(Please circle the number that represents how you feel about the scene and the point that you are standing.)

2. I liked the scene from this point				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
3. The scene is				
Very Closed	Fairly Closed	Neutral	Fairly Open	Very Open
1	2	3	4	5
4. The place where I stand is				
Very Unsafe	Fairly Unsafe	Neutral	Fairly Safe	Very Safe
1	2	3	4	5
5. The buildings in the background of the garden scene are				
Very Disturbing	Fairly Disturbing	Neutral	Fairly Pleasant	Very Pleasant
1	2	3	4	5
6. I like the buildings in the background of the garden scene				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
7. The scene from this point is				
Very foreign	Fairly foreign	Neutral	Fairly Familiar	Very Familiar
1	2	3	4	5
8. In the future, the buildings I see from this point in the background should be lower in height				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
9. In the future, the color of the buildings I see from this point in the background should be changed				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
10. I feel a deep contrast between the buildings in the background and the garden				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
11. The buildings in the background of the scene are sublime element				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

12. The buildings in the background are an important part of the garden scenery				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Gender:	
Female	Male

Age: …………………………………………………………………………………………………..
Income (monthly): ………………………………………………………………………………....
What is the highest degree or level of school you have completed? ....
Is your occupation related to a design discipline?

Yes	No

Have you ever taken any classes about the natural environment in a graduate degree program?	
Yes	No

Nationality: ……………………………………………………………………………………………...

浜離宮恩賜庭園の観察点に関する調査

本調査は千葉大学大学院園芸学研究科博士後期課程の学生が実施しています。

ご協力、ありがとうございます。

本調査は、日本の伝統的な庭園である浜離宮恩賜庭園において、個人の景観嗜好に影響を及ぼしている要素を特定するために行います。

景観の嗜好の美意識に関して、プロスペクト・リフュージ（prospect-refuge）説というものがあります。この調査は浜離宮恩賜庭園とこの説の原理との関係を特定するために用います。

あなたの回答は自由意志によるものであり、本研究以外に使用しません。また、個人の名前は特定されません。全ての回答は全体として分析されます。

調査の間でいつでも中止することが可能です。また、名前の公表も任意です。調査においての質問の答えに正誤はありません。

この調査に制限時間はありません。しかしながら、第一印象をご回答いただくことをお願いします。

調査において、指定された特定の立ち位置から、指定された方向を見渡して質問に回答していただきます。

質問事項についてご質問がございましたらお気軽にお問い合わせください。

ご協力ありがとうございます。

ブケット・セノグル

千葉大学

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博士後期課程

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1. **景観において最も好意を持った要素は**………………………**なぜなら**………………………

(あなたが立っている場所からの景観と位置について、あなたがどのように感じるかを最もよく表している番号を丸で囲んでください。)

2. **この位置からの景観が好きである**				
好きでない	あまり好きではない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5
3. **景観は**				
とても閉じている	まあまあ閉じている	どちらでもない	まあまあ開いている	とても開いている
1	2	3	4	5
4. **現在立っている場所は**				
全く安全ではない	あまり安全ではない	どちらでもない	まあまあ安全である	とても安全である
1	2	3	4	5
5. **景観の中にある庭園の外にある建物は**				
まあまあ邪魔である	どちらでもない	まあまあ心地よい	とても心地よい	まあまあ邪魔である
1	2	3	4	5
6. **景観の中にある庭園の外にある建物が好きである**				
好きでない	あまり好きではない	まあまあ好きである	好きである	好きである
1	2	3	4	5
7. **この位置からの景観は**				
とても異質である	まあまあ異質である	どちらでもない	まあまあ馴染みがある	とても馴染みがある
1	2	3	4	5
8. **将来的に、この位置から見える庭園の外にある建物の高さは低いほうが良い。**				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
9. **将来的に、この位置から見える庭園の外にある建物の色は変えられるべきだ。**				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
10. **庭園の外にある建物と庭園の間に強い相違があると感じる。**				

強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
11. **景観の中にある庭園の外にある建物は、荘厳さの要素である。**				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
12. **庭園の景観には、その庭園の外にある建物が必要であると思う。**				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
性別:				
女性		男性		
年齢..				
収入 (年)...				
最終学歴..				
あなたの職業はデザインに関係がありますか				
はい		いいえ		
あなたはこれまでに博士課程において自然環境についての授業を受講したことがありますか。				
はい		いいえ		
国籍				

APPENDIX 4. Sampling the Sites in Hama-rikyu Gardens

Expert Assessments

In this survey, I need your assessments on the selected environments in Hama-rikyu Gardens. According to your assessment results, I will be able to select the most appropriate environments to be used in a questionnaire which will be applied to the visitors of the garden.

To achieve this aim, I kindly ask you to assess each photo in the survey by 9 different elements. These elements are:

1. Water,
2. Trees,
3. Hills,
4. Traditional Structures,
5. Turf and Ground-covers (grass etc.),
6. Paths,
7. Field and crops
8. Mixed (mixture of two or more landscape elements indicated above),
9. External Buildings (modern buildings at the background of the garden scenery)

The purpose of this assessment is to determine the dominance level of the landscape elements for each photo. Please look at each photo and assess the photo for each 7 different elements. Assessments will be done in five step scales. If you think that a landscape element is absent or very weak in the photo, you should mark number 1 in the scale. Likewise, if you think that a landscape element is very dominant in the photo, you should mark number 5.

1: absent or very weak

2: weak

3: neither weak nor dominant

4: dominant

5: very dominant

After assessing the landscape elements of the garden, please assess the external buildings (the modern buildings at the background of the garden scenery) in the same scale. If you think that they have a major influence on the scene, you may mark 5 or 4, and vice versa.

Thank you for your cooperation and time.

Photo 1.

Water				
1	2	3	4	5
Trees				
1	2	3	4	5
Hills				
1	2	3	4	5
Traditional structures				
1	2	3	4	5
Turf / ground-covers				
1	2	3	4	5
Paths				
1	2	3	4	5
Fields and crops				
1	2	3	4	5
Mixed				
1	2	3	4	5
External buildings				
1	2	3	4	5

Next page – Photo 2

APPENDIX 5. Expert Assessments for Dominant Landscape Elements

	Water	Trees	Hills	Traditional Structures	Turf and Groundcover	Paths	Field and crops	Mixed	External Buildings
Photo 1	1.00	3.71	2.57	1.00	3.57	2.29	2.00	3.14	3.14
Photo 2	1.57	2.86	1.43	1.00	4.14	1.43	2.14	2.29	2.71
Photo 3	4.71	3.14	1.57	1.86	2.29	1.71	1.71	2.57	4.71
Photo 4	4.71	3.86	1.29	1.00	1.86	1.57	1.57	2.86	2.14
Photo 5	1.00	3.43	1.14	1.00	2.14	1.43	4.14	3.43	1.00
Photo 6	1.29	4.14	1.00	1.00	2.86	4.00	1.43	3.29	1.57
Photo 7	2.57	3.00	3.14	1.29	3.57	3.00	2.00	3.57	4.29
Photo 8	1.00	4.43	3.14	1.29	3.14	3.43	1.14	3.14	2.86
Photo 9	1.00	3.71	4.00	1.14	3.29	3.57	1.71	3.29	2.71
Photo 10	1.14	3.43	1.29	1.29	3.71	2.71	1.57	3.14	3.00
Photo 11	2.86	1.71	2.86	1.00	2.86	3.00	1.57	3.29	3.71
Photo 12	3.43	4.43	2.00	2.00	3.14	2.86	1.86	3.43	3.57
Photo 13	4.43	2.71	1.43	1.71	2.43	2.00	1.43	3.00	4.57
Photo 14	1.00	3.71	1.00	1.00	2.00	2.86	4.14	2.86	1.71
Photo 15	2.71	4.14	1.43	1.00	3.29	3.43	1.71	3.00	1.57
Photo 16	1.00	2.71	1.57	1.00	3.71	2.14	2.00	2.86	3.29
Photo 17	3.57	3.71	1.14	1.43	3.29	1.43	1.57	3.57	1.57
Photo 18	4.00	3.57	1.57	1.14	3.14	1.57	1.57	3.43	3.43
Photo 19	1.00	4.00	1.29	1.00	3.29	4.14	2.14	3.57	3.00
Photo 20	4.14	1.43	3.14	1.00	3.00	2.57	1.71	3.14	4.00
Photo 21	3.00	3.71	3.71	1.00	3.14	3.00	1.57	3.29	3.57
Photo 22	2.57	3.71	2.43	1.00	3.29	3.14	1.86	3.29	3.29
Photo 23	4.57	2.57	1.43	1.71	2.00	1.00	1.57	2.86	3.71
Photo 24	1.00	3.71	3.29	1.00	3.00	3.43	1.71	3.29	1.14
Photo 25	3.86	4.57	1.29	1.14	2.57	1.14	1.71	3.29	2.43
Photo 26	3.43	3.29	1.86	2.43	2.29	3.00	1.71	3.43	3.71
Photo 27	4.29	3.29	1.43	2.86	2.14	2.29	1.71	3.71	2.71
Photo 28	2.71	2.57	2.43	4.00	3.29	1.57	1.71	3.57	3.29
Photo 29	2.29	3.86	3.00	1.71	3.00	4.14	1.86	3.86	2.29
Photo 30	2.29	2.86	1.86	1.71	3.00	4.29	1.71	3.14	2.86
Photo 31	1.86	2.14	1.43	1.14	4.00	1.86	1.71	2.57	2.00
Photo 32	3.86	2.43	1.71	3.14	1.71	3.43	1.57	3.71	4.14
Photo 33	1.00	3.43	3.57	1.57	3.14	3.86	2.29	3.43	1.86
Photo 34	1.00	3.14	1.29	1.00	3.00	1.86	4.14	3.00	3.71
Photo 35	3.86	3.43	1.86	1.86	2.86	2.14	1.86	3.29	2.86
Photo 36	3.71	2.14	1.71	1.57	3.29	2.00	1.71	3.00	3.57
Photo 37	1.00	4.00	1.43	1.00	3.29	3.57	1.86	3.14	3.00
Photo 38	2.86	3.86	1.86	1.86	3.00	2.43	1.71	3.43	4.00
Photo 39	2.29	3.14	1.71	2.57	3.00	3.29	1.71	3.29	4.00
Photo 40	3.43	3.14	1.43	2.14	3.57	1.71	1.57	3.57	3.43
Photo 41	3.57	3.57	2.86	1.71	2.71	1.71	2.00	3.14	3.14
Photo 42	1.00	3.00	1.57	1.00	3.29	1.71	1.57	3.00	4.43
Photo 43	3.86	3.29	1.57	2.00	2.86	2.57	1.86	3.86	4.29
Photo 44	1.00	3.14	1.43	1.57	4.00	1.57	1.57	2.43	4.14
Photo 45	3.29	4.00	2.43	2.14	2.71	2.86	1.71	4.14	3.86
Photo 46	2.14	3.57	1.43	1.43	3.43	4.57	1.71	3.57	3.14
Photo 47	3.86	2.71	1.29	2.00	3.14	2.71	1.43	3.43	3.43
Photo 48	1.43	2.86	1.57	3.43	2.00	4.00	2.00	3.43	3.86

Photo 49	1.00	3.00	1.00	1.00	2.43	4.14	4.71	3.57	1.71
Photo 50	1.57	5.00	1.29	1.14	3.71	1.86	1.86	3.14	1.14
Photo 51	3.29	2.86	1.43	3.00	2.57	4.29	2.00	3.57	4.00
Photo 52	1.00	3.00	1.14	1.29	2.14	2.00	4.86	3.00	1.86
Photo 53	3.71	3.71	2.00	1.29	2.71	2.00	1.71	3.57	2.43
Photo 54	2.86	2.86	1.86	4.00	2.57	3.86	2.00	3.57	3.14
Photo 55	4.00	3.86	1.86	3.00	2.57	2.00	2.00	3.71	3.14
Photo 56	1.00	2.86	1.29	1.57	4.29	3.86	2.00	3.71	2.43
Photo 57	1.00	2.71	1.57	1.00	4.71	1.86	2.29	2.57	4.00
Photo 58	3.14	2.57	1.86	1.71	3.43	2.14	2.14	3.00	3.43
Photo 59	3.14	2.57	1.71	2.29	3.14	4.00	1.86	3.14	2.86
Photo 60	4.57	2.71	1.71	1.57	3.14	2.14	1.86	3.14	3.00
Photo 61	1.00	2.57	1.57	1.29	2.71	1.43	3.86	2.86	4.14
Photo 62	1.00	2.86	1.71	1.71	3.57	4.57	2.00	3.57	2.86
Photo 63	2.29	2.71	1.57	2.29	3.43	4.14	1.86	3.29	3.57
Photo 64	3.29	3.57	1.57	2.00	3.29	2.86	1.71	3.29	3.43
Photo 65	4.43	3.29	1.43	3.00	2.14	3.71	1.86	3.57	2.57
Photo 66	4.00	3.71	2.00	1.57	2.57	1.86	1.86	3.29	3.00
Photo 67	1.00	3.14	1.57	1.00	2.57	2.00	4.43	3.14	3.71
Photo 68	1.00	3.14	1.57	1.00	3.57	4.43	1.86	3.29	3.71
Photo 69	4.29	3.00	2.00	2.43	1.71	1.57	1.57	2.86	3.14
Photo 70	5.00	2.29	1.57	4.00	1.86	1.57	1.71	3.29	2.71
Photo 71	1.00	2.29	1.57	1.00	2.14	3.00	4.29	2.57	3.86
Photo 72	1.00	2.71	1.57	1.00	3.57	3.86	1.86	3.43	4.43
Photo 73	1.00	2.43	1.43	1.57	2.00	2.29	4.29	2.57	4.14
Photo 74	5.00	2.86	1.29	1.71	1.86	1.71	1.57	2.43	2.71
Photo 75	1.00	2.71	1.57	1.29	2.43	2.57	4.14	3.29	4.29
Photo 76	2.86	3.57	1.57	2.86	2.43	4.14	2.00	3.29	3.14
Photo 77	2.43	2.57	1.14	4.43	3.00	1.86	2.14	3.57	2.00
Photo 78	3.43	3.71	1.29	2.00	3.00	3.57	1.86	3.71	3.86
Photo 79	4.14	3.00	1.57	2.57	2.86	2.29	2.29	3.29	3.86
Photo 80	3.57	3.57	2.00	2.71	2.71	2.57	2.00	3.71	4.29
Photo 81	4.29	3.14	1.86	2.43	2.57	2.00	1.86	3.14	4.00
Photo 82	4.29	3.29	1.71	1.71	2.43	2.00	1.86	2.71	3.71
Photo 83	1.86	3.00	1.71	1.29	4.14	2.43	1.86	3.14	3.29
Photo 84	4.86	3.43	1.71	2.00	2.14	2.71	1.86	3.29	3.29
Photo 85	4.86	3.14	1.71	2.57	2.14	1.86	1.86	3.00	3.00
Photo 86	3.71	2.86	1.71	2.57	2.86	1.86	1.57	3.29	4.00
Photo 87	5.00	3.00	1.71	2.29	1.71	1.71	1.57	3.00	2.86
Photo 88	4.43	3.00	1.57	2.43	2.14	1.86	1.86	3.29	2.86
Photo 89	4.86	3.00	2.00	3.29	1.71	2.00	1.57	3.29	3.43
Photo 90	4.29	3.43	1.57	2.57	3.14	2.14	1.57	3.43	2.43
Photo 91	4.29	2.86	1.86	2.86	2.86	2.00	1.71	3.43	3.29
Photo 92	4.14	3.29	1.57	2.29	2.57	2.00	1.57	3.29	3.29

APPENDIX 6. Visual Stimulus of the Main Questionnaire


Photo 1


Photo 2

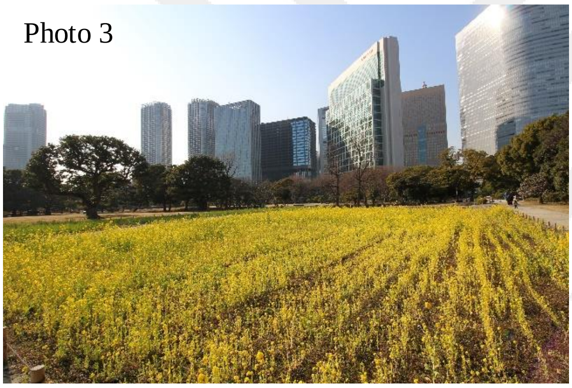


Photo 3


Photo 4


Photo 5


Photo 6


Photo 7


Photo 8


Photo 9


Photo 10


Photo 11


Photo 12


Photo 13


Photo 14


Photo 15


Photo 16


Photo 17


Photo 18


Photo 19


Photo 20


Photo 21


Photo 22


Photo 23


Photo 24


Photo 25


Photo 26


Photo 27


Photo 28


Photo 29


Photo 30

APPENDIX 7. Affective appraisals of Hama-rikyu Gardens

This pilot study is a part of the ongoing research namely Visual Effect of High-rise Buildings on Daimyo Gardens in Tokyo. The participants of the study are the students of Chiba University Graduate School Environmental Science and Landscape Architecture Course. Your personal data will not be identified after analyzing statistically.

There is no right or wrong answers in this study.

In the next step, you will see a photograph of a Japanese garden. With reference to the photograph, please rate each property on 5-point bipolar scales.

The meanings of the numbers on the scale are as below:

1 and 5 = very

2 and 4 = fairly

3 = neutral

THANK YOU FOR YOUR COOPERATION.

Buket Senoglu

Chiba University Graduate School of Horticulture

Environmental Science and Landscape Architecture

Supervisor: Prof. Isami Kinoshita –

Beautiful 美しい	1	2	3	4	5	Ugly 醜い
Orderly 整っている	1	2	3	4	5	Disorderly 整っていない
Simple 簡素である	1	2	3	4	5	Complex 複雑である
Restful 安らかである	1	2	3	4	5	Stressful 安らかでない
Interesting 興味深い	1	2	3	4	5	Boring つまらない
Warm 温かい	1	2	3	4	5	Cool 冷たい
Calm 穏やかである	1	2	3	4	5	Frenzied 穏やかである
Pleasing 喜ばしい	1	2	3	4	5	Displeasing 喜ばしくない
Arousing 喚起的である	1	2	3	4	5	Dull 喚起的でない
Energizing 活気のある	1	2	3	4	5	Gloomy 憂鬱である
Tranquil 落ち着く	1	2	3	4	5	Tense 落ち着かない

Inviting 招いている	1	2	3	4	5	Uninviting 招いていない
Coherent – 筋が通ってる	1	2	3	4	5	Incoherent 筋が通っていい
Exciting 興奮する	1	2	3	4	5	Unexciting 興奮しない
Comfortable 心地良い	1	2	3	4	5	Uncomfortable 心地悪い
Inspiring 感動する	1	2	3	4	5	Uninspiring 感動しない
Secure 安心する	1	2	3	4	5	Insecure 不安である
Natural 自然である	1	2	3	4	5	Artificial 人工的である
Stimulating 刺激的である	1	2	3	4	5	Unstimulating 刺激的でない
Good 良い	1	2	3	4	5	Bad 悪い
Various 多様である	1	2	3	4	5	Monotonous 単調である
Relaxing くつろげる	1	2	3	4	5	Frustrating くつろげない
Ordinary 普通である	1	2	3	4	5	Strange 変でない
Harmonious 調和のとれた	1	2	3	4	5	Disharmonious 調和のとれていない
Refreshing 清々しい	1	2	3	4	5	Exhausting 疲れている
Active 積極的である	1	2	3	4	5	Passive 消極的である
Safe 安全である	1	2	3	4	5	Threatening 脅威である
Open 開いている	1	2	3	4	5	Closed 閉じている
Favorable 好きである	1	2	3	4	5	Unfavorable 好きでない

APPENDIX 8.

A Survey About the Visual Effect of External Buildings on Hama-rikyu Gardens' Scenery

Dear respondent,

Thank you for agreeing to take part in this survey.

This survey was prepared by a Ph.D. student of Chiba University, Graduate School of Horticulture.

The purpose of the survey is to determine the visual effect of external buildings which are visible from inside the garden. We believe that obtaining visitors' perception of the garden's visual quality is vital to future planning. Let your voice be heard.

Your participation is voluntary, and your responses will be kept confidential. Responses will not be identified by individual. All responses will be compiled together and analyzed as a group. The information provided will be used solely for the purpose of this research project and only aggregated results will be reported in reputable academic publications.

There are 3 parts to the survey. The 1st part is a photo-survey. The 2nd part comprises some propositions to determine your level of agreement. The 3rd part collects a few details about you.

There is no right or wrong answer to the questions asked in the survey. Please indicate the answer which corresponds your feelings and thoughts.

There is no time limit for the survey. You are free to think as much as you want in the questions. However, it would be enough and worthwhile for us if you give the first answer in your mind. We expect the questionnaire to take approximately 15 minutes of your time.

Please answer the questions after strolling in the garden. On completion, please return the questionnaire to a survey attendant.

We greatly value your co-operation. Thank you for your participation and support.

Please circle or mark the number which corresponds your choice for each photo.

1.1. I liked the scene presented in this photo 1

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

1.2. The scene presented in this photo 1 is…

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

2.1. I liked the scene presented in this photo 2

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

2.2. The scene presented in this photo 2 is….

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

3.1. I liked the scene presented in this photo 3

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

3.2. The scene presented in this photo 3 is…

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

4.1. I liked the scene presented in this photo 4...

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

4.2. The scene presented in this photo 4 is…

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

5.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
5.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

6.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
6.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

7.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
7.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

8.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
8.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

9.1. I liked the scene presented in this photo				
Not at all	A little	Somewha t	Quite bit	Very much
1	2	3	4	5
9.2. The scene presented in this photo is				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interestin g	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonou s	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

10.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
10.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

11.1. I liked the scene presented in this photo				
Not at all	A little	Somewha t	Quite bit	Very much
1	2	3	4	5
11.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interestin g	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonou s	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

12.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
12.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

13.1. I liked the scene presented in this photo

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

13.2. The scene presented in this photo is…

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

14.1. I liked the scene presented in this photo

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

14.2. The scene presented in this photo is...

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

15.1. I liked the scene presented in this photo

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

15.2. The scene presented in this photo is…

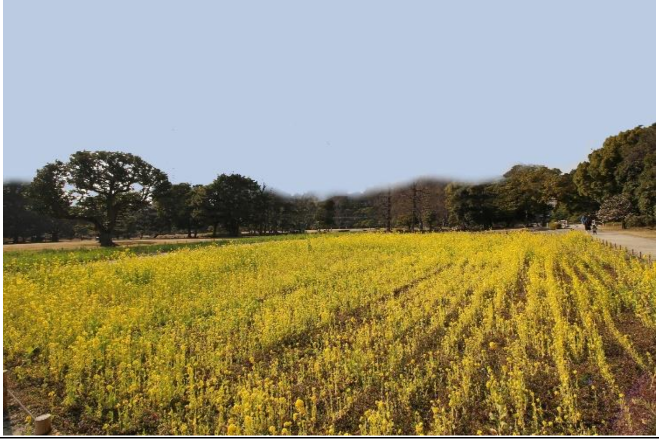
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

16.1. I liked the scene presented in this photo

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

16.2. The scene presented in this photo is…

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5



17.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
17.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

18.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
18.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

19.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
19.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

20.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
20.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

21.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
21.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

22.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
22.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

23.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
23.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

24.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
24.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

25.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
25.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

26.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
26.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

27.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
27.2. The scene presented in this photo is...				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

28.1. I liked the scene presented in this photo				
Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5
28.2. The scene presented in this photo is…				
Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interesting	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

29.1. I liked the scene presented in this photo

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

29.2. The scene presented in this photo is…

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interestin g	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

30.1. I liked the scene presented in this photo

Not at all	A little	Somewhat	Quite bit	Very much
1	2	3	4	5

30.2. The scene presented in this photo is…

Very Natural	Natural	Neutral	Artificial	Very Artificial
1	2	3	4	5
Very Interesting	Interestin g	Neutral	Boring	Very Boring
1	2	3	4	5
Very Various	Various	Neutral	Monotonous	Very Monotonous
1	2	3	4	5
Very Restful	Restful	Neutral	Stressful	Very Stressful
1	2	3	4	5

Please continue to Part 2 on the next page

Part 2. *Please circle or mark the number which corresponds to your level of agreement with each proposition.*				
1. The combination of external buildings and the traditional garden is inappropriate				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
2. The external buildings devalue the garden's scenery.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
3. I can feel untouched nature in this garden.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
4. The external buildings have a negative impact on the garden's scenery.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
5. The combination of the traditional garden and the modern buildings at the background is attractive for me.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
6. The external buildings help me to navigate in the garden.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
7. This garden is a good representative of traditional Japanese gardens.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
8. This garden is a good representative of Tokyo's urban image.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
9. The external buildings dwarf the garden elements.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
10. It is not easy to focus on the garden's scenery because of the external buildings.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
11. The external buildings create a sense of oppression.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
12. This garden looks like a modern urban park rather than a traditional garden due to the external buildings.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
13. I wish I could see natural elements in the far distance (such as Mt. Fuji, Mt. Tsukuba, the ocean) rather than the high-rise buildings.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
14. It would be better if the external buildings were covered by green walls (plants).				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
15. The external buildings damage the historical atmosphere of the garden.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

16. The external building views create an eyesore.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
17. The external buildings are in harmony with the garden scenery.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
18. External building sceneries from inside the garden can be called ‘borrowed scenery’.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
19. There is a loss of character in this garden because of the external buildings’ visual intrusion.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
20. The external buildings are a symbol of economic development.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
21. The external buildings symbolize the modernism.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
22. The external buildings are awe-inspiring.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Please continue to Part 3 on the next page

Part 3. Socio-demographic information

Please indicate your answer by filling the blanks or putting a mark in the squares below

Gender:

Female	Male

Age:…………………………………………………………………………………………

Income (annually):

~$ 3million	$ 3 – 4 million	$ 4 – 6 million	$ 6 – 8 million	$ 8 – 10 million	~$ 10 million

What is the highest degree or level of school you have completed?

Elementary school	Junior high-school	High-school	Bachelor's degree	Master's degree	PhD	Other
						(……………………)

What is the spatial character of the place where most of your childhood (between 3 – 12 years old) took place?

Rural	Suburban	Urban	Metropol	Other (……………….)

What is the spatial character of the place where you live now?

Rural	Suburban	Urban	Metropol	Other (……………….)

Have you ever visited this garden (Hama-rikyu Gardens) before?

Yes	No
If 'Yes', please indicate the number of visits	…………………………….

Have you ever been visited any other traditional Japanese gardens?

Yes	No

Is your occupation related to a design discipline?

Yes	No

Have you ever taken any classes about the natural environment in a graduate degree program?

Yes	No

Nationality:
…………………………………………………………………………………………………..

浜離宮恩賜庭園の景観における周辺建築物が及ぼす視覚的影響の調査

回答者の皆様

この度は、アンケートへの回答にご協力くださりありがとうございます。

このアンケートは、千葉大学園芸学研究科の博士後期課程の学生が作成したものです。

この調査の目的は、庭園の内部から見ることができる外部の建築物が及ぼす視覚的影響を測定することです。訪問者が抱く庭園の視覚的質への考えを聞き入れることは、将来の計画に非常に重要であると考えています。あなたの声をぜひお聞かせください。

アンケートへの参加は任意であり、回答は全て内密情報として扱います。回答は個人が特定できないようになっており、全ての回答は総計された上で分析されます。回答から得られた個人情報は本調査の目的のみに使用され、総計された回答のみが学術出版物に報告されます。

このアンケートは三部に分かれています。第一部は写真による調査です。第二部では賛成の度合いを測定します。そして第三部では回答者の背景をお聞きします。

このアンケートには、正しいまたは誤った回答は存在しません。回答は自らが感じた、または考えたままにお答えいただけると幸いです。

このアンケートでは時間制限を設けておりません。しかしながら、最初に浮かんだ回答を書いていただけると、より調査の意図に沿うかと思います。アンケートは15分程で終了するように作成してあります。

アンケートの回答は庭園をある程度歩いたうえでお答えください。

アンケートにご協力くださりありがとうございます。

調査者：ブケット・セノグル

千葉大学

第一部. 写真による調査

それぞれの写真について当てはまる番号を丸で囲ってください。

1.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

1.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

2.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

2.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

3.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

3.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

4.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

4.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

5.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

5.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

6.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

6.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

7.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

7.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

8.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

8.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

9.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

9.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

10.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

10.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

11.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

11.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

12.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

12.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

13.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

13.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

14.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

14.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

15.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

15.2. この写真の景色は・・・

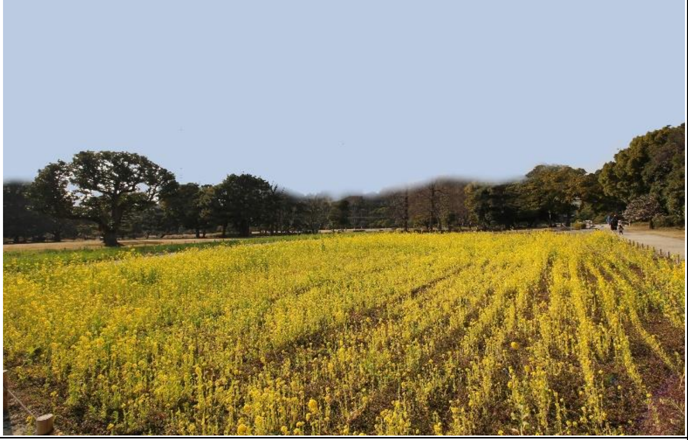
とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

16.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

16.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5



17.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

17.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

18.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

18.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

19.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

19.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

20.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

20.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

21.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

21.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

22.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

22.2. この写真の景色は・・・

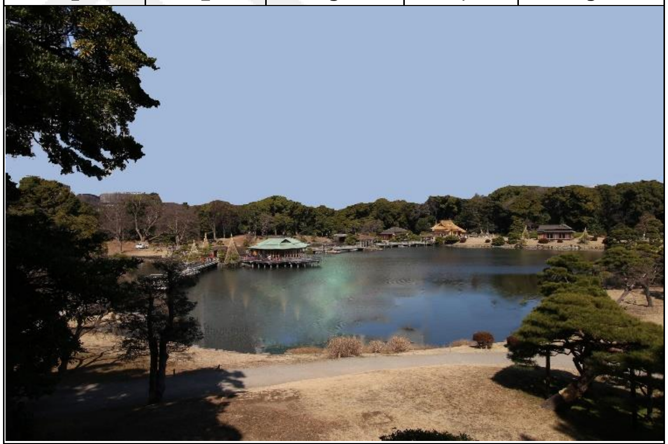
とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

23.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

23.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5



24.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

24.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

25.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

25.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

26.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

26.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

27.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

27.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

28.1. この写真の景色が好きである

全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5

28.2. この写真の景色は・・・

とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

29.1. この写真の景色が好きである				
全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5
29.2. この写真の景色は・・・				
とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

30.1. この写真の景色が好きである				
全く好きでない	あまり好きでない	まあまあ好きである	好きである	とても好きである
1	2	3	4	5
30.2. この写真の景色は・・・				
とても自然である	自然である	どちらでもない	人工的である	とても人工的である
1	2	3	4	5
とても面白い	面白い	どちらでもない	退屈である	とても退屈である
1	2	3	4	5
とても多様である	多様である	どちらでもない	単調である	とても単調である
1	2	3	4	5
とても平穏である	平穏である	どちらでもない	圧迫感がある	とても圧迫感がある
1	2	3	4	5

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第二部. *それぞれの提案についてあなたがどの程度賛成できるか当てはまる番号を丸で囲んでください。*				
1. 伝統的な庭園とその周辺に位置する建築物の組み合わせは不適切である。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
2. 周辺に位置する建築物が庭園の景色の価値を下げている。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
3. この庭園にいると手をつけられていない自然を感じることができる。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
4. 周辺に位置する建築物は庭園の景色に否定的な影響がある。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
5. 伝統的な庭園と背景にある近代的な建築物の並行性は魅力がある。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
6. 周辺に位置する建築物は庭園の中で行き先を示すのに役立つ。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
7. この庭園は伝統的な日本庭園を良く表現している。				
強く反対	反対	どちらでもない	賛成	よく賛成
1	2	3	4	5
8. この庭園は東京の現代的な印象を良く表現している。				
強く反対	反対	どちらでもない	賛成	よく賛成
1	2	3	4	5
9. 周辺に位置する建築物は庭園の要素を小さくしている。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
10. 周辺に位置する建築物のせいで庭園の景色に集中することが難しい。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
11. 周辺に位置する建築物は景色に圧迫感をつくりだしている。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
12. 周辺に位置する建築物のせいで、この庭園は伝統的な庭園というよりは現代的な都会の公園に見える。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
13. 遠くの景色に高層ビルではなく自然の要素（富士山や筑波山）が見えたらいいと思う。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
14. 周辺に位置する建築物が緑の壁（植物）で覆われていればいいと思う。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5

15. 周辺に位置する建築物は庭園の歴史的な雰囲気を阻害している。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
16. 周辺に位置する建築物の景色は目障りある。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
17. 周辺に位置する建築物は庭園の景色と調和がある。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
18. 庭園内から見える周辺に位置する建築物の景色は「借景」と呼部ことができる。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
19. 周辺に位置する建築物による視覚侵害のせいで、この庭園の特徴が失われている。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
20. 周辺に位置する建築物は経済的な発展の表れである。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
21. 周辺に位置する建築物は現代性を表している。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5
22. 周辺に位置する建築物は荘厳である。				
強く反対	反対	どちらでもない	賛成	強く賛成
1	2	3	4	5

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第三部. 回答者の社会的背景

以下の質問の答えに対して空欄を埋めるか当てはまるものに印をつけてください。

性別:

女性：	男性：

年齢:……………………………………………………………………………………………

収入 (年収):

~300万円	300- 400万円	400- 600万円	600- 800万円	800- 1000万円	1000万円~

最終学歴:

小学校	中学校	高校	大学・学部	大学・修士	大学・博士	その他(……………)

あなたの幼少期（３−１２歳）は主にどのような場所で過ごしましたか。

田舎	郊外	都市	都市中心部	その他(……………………)

今日、あなたが居住するのはどのような場所ですか。

田舎	郊外	都市	都市中心部	その他(……………………)

これまでに浜離宮恩賜庭園を訪れたことがありますか。

はい	いいえ
はいと答えた場合、何回訪れましたか。	

これまでに他の伝統的な日本庭園を訪れたことがありますか。

はい	いいえ

あなたの職業はデザイン分野に関係がありますか。

はい	いいえ

これまでに大学修士以上の自然環境に関連した講義を受けたことがありますか。

はい	いいえ

国籍: ……………………………………………………………………………………………...

APPENDIX 9.

Comparison Between Simulated Photos and Original Photos Regarding Affective Appraisals

Comparison between simulated and original groups		N	Mean	Std. Deviation	df	F	Sig.
Artificial - Natural	Simulated	5632	2.6042	1.10927	11359	1370.012	.000
	Original	5729	3.3196	.94561			
Boring - Interesting	Simulated	5598	2.7922	.86413	11257	46.204	.000
	Original	5661	2.6824	.85079			
Monotonous - Various	Simulated	5584	3.0197	1.17117	11287	268.050	.000
	Original	5705	2.6550	1.19483			
Stressful - Restful	Simulated	5600	2.2148	.80481	11258	767.582	.000
	Original	5660	2.6433	.83576			

Comparison between photo pairs		N	Mean	Std. Deviation	df	F	Sig.
Artificial - Natural	Photo 1	392	2.6913	2.30625	755	55.822	.000
	Photo 21	365	3.6438	.81149			
Boring - Interesting	Photo 1	390	2.7231	.83941	747	5.570	.019
	Photo 21	359	2.5794	.82470			
Monotonous - Various	Photo 1	389	2.9280	.89958	751	53.947	.000
	Photo 21	364	2.4588	.85019			
Stressful - Restful	Photo 1	391	1.9003	.71092	749	274.178	.000
	Photo 21	360	2.8750	.89781			
Artificial - Natural	Photo 16	390	2.2051	.85683	742	285.551	.000
	Photo 26	354	3.2542	.83330			
Boring - Interesting	Photo 16	385	2.5532	.87969	731	4.400	.036
	Photo 26	348	2.6839	.79847			
Monotonous - Various	Photo 16	383	2.8747	.89791	735	33.902	.000
	Photo 26	354	2.5169	.75721			

Stressful - Restful	Photo 16	384	1.9661	.70906	733	165.547	.000
	Photo 26	351	2.6809	.79689			
Artificial - Natural	Photo 6	390	2.1436	.75877	759	23.930	.000
	Photo 29	371	2.4205	.80271			
Boring - Interesting	Photo 6	384	2.9349	.89585	746	.074	.786
	Photo 29	364	2.9176	.84555			
Monotonous - Various	Photo 6	382	3.0969	.83464	746	.533	.466
	Photo 29	366	3.2186	3.14600			
Stressful - Restful	Photo 6	383	2.1540	1.23423	750	1.290	.256
	Photo 29	369	2.2385	.73168			
Artificial - Natural	Photo 20	372	3.1129	.88907	767	139.222	.000
	Photo 8	397	3.8136	.75580			
Boring - Interesting	Photo 20	371	2.6253	.73323	761	.443	.506
	Photo 8	392	2.5867	.85980			
Monotonous - Various	Photo 20	367	2.7221	.77115	762	32.391	.000
	Photo 8	397	2.3955	.81171			
Stressful - Restful	Photo 20	370	2.4432	.69709	758	53.728	.000
	Photo 8	390	2.8564	.84531			
Artificial - Natural	Photo 27	367	2.7057	.98099	760	1.709	.191
	Photo 4	395	2.8025	1.05748			
Boring - Interesting	Photo 27	365	2.5342	.80660	749	2.769	.097
	Photo 4	386	2.4378	.78129			
Monotonous - Various	Photo 27	365	2.7808	.84915	749	.094	.759
	Photo 4	386	2.7565	1.27219			
Stressful - Restful	Photo 27	366	2.2432	.72784	754	.414	.520
	Photo 4	390	2.2103	.67789			
Artificial - Natural	Photo 24	365	2.4082	.84544	755	378.030	.000
	Photo 12	392	3.6122	.85684			
Boring - Interesting	Photo 24	363	2.6612	.80283	749	2.430	.119
	Photo 12	388	2.5644	.89123			
Monotonous - Various	Photo 24	361	2.8560	.80710	749	53.981	.000
	Photo 12	390	2.4077	.86071			
Stressful - Restful	Photo 24	362	2.1381	.74636	747	145.641	.000

	Photo 12	387	2.8811	.92256			
Artificial - Natural	Photo 25	363	2.5647	.88140	748	99.472	.000
	Photo 13	387	3.1835	.81751			
Boring - Interesting	Photo 25	363	2.9669	.81356	745	.856	.355
	Photo 13	384	3.0208	.77802			
Monotonous - Various	Photo 25	366	3.1803	.82112	749	7.185	.008
	Photo 13	385	3.0208	.80983			
Stressful - Restful	Photo 25	362	2.2983	.71737	741	57.551	.000
	Photo 13	381	2.6982	.71871			
Artificial - Natural	Photo 30	371	2.2345	.88927	755	34.614	.000
	Photo 10	386	2.6244	.93215			
Boring - Interesting	Photo 30	369	3.0569	.90561	746	1.304	.254
	Photo 10	379	3.1293	.82722			
Monotonous - Various	Photo 30	367	3.4196	2.30903	749	2.170	.141
	Photo 10	384	3.2344	.84103			
Stressful - Restful	Photo 30	368	2.1658	.76163	743	16.836	.000
	Photo 10	377	2.3926	.74716			
Artificial - Natural	Photo 11	390	3.0590	.95616	775	67.026	.000
	Photo 2	387	3.5891	.84509			
Boring - Interesting	Photo 11	391	2.5934	.81389	775	9.611	.002
	Photo 2	386	2.4197	.74557			
Monotonous - Various	Photo 11	387	2.7132	.84123	771	41.602	.000
	Photo 2	386	2.3368	.77997			
Stressful - Restful	Photo 11	393	2.3715	.72801	777	22.698	.000
	Photo 2	386	2.6373	.82686			
Artificial - Natural	Photo 14	378	2.6878	.94849	740	138.777	.000
	Photo 23	364	3.4533	.81346			
Boring - Interesting	Photo 14	377	2.9496	.89627	734	9.278	.002
	Photo 23	359	2.7577	.80833			
Monotonous - Various	Photo 14	378	3.3201	2.26627	741	24.189	.000
	Photo 23	365	2.6986	.84653			
Stressful - Restful	Photo 14	381	2.2047	.68831	739	109.743	.000
	Photo 23	360	2.7917	.83345			

Artificial - Natural	Photo 22	350	2.3029	.83597	735	321.566	.000
	Photo 15	387	3.4444	.88680			
Boring - Interesting	Photo 22	344	3.1424	.83652	726	10.627	.001
	Photo 15	384	2.9297	.91563			
Monotonous - Various	Photo 22	345	3.3130	.83212	728	82.795	.000
	Photo 15	385	2.7299	.89254			
Stressful - Restful	Photo 22	343	2.2653	.76253	724	106.641	.000
	Photo 15	383	2.8773	.82695			
Artificial - Natural	Photo 28	369	2.6802	.90929	761	151.031	.000
	Photo 5	394	3.4670	.85912			
Boring - Interesting	Photo 28	370	2.5405	.77195	763	1.695	.193
	Photo 5	395	2.4658	.81279			
Monotonous - Various	Photo 28	366	2.7896	.80886	758	30.484	.000
	Photo 5	394	2.4645	.81338			
Stressful - Restful	Photo 28	369	2.1463	.71494	757	30.986	.000
	Photo 5	390	2.4410	.74196			
Artificial - Natural	Photo 17	373	2.2413	.90738	763	340.855	.000
	Photo 3	392	3.4719	.93482			
Boring - Interesting	Photo 17	368	2.9565	.88170	756	42.137	.000
	Photo 3	390	2.5333	.91132			
Monotonous - Various	Photo 17	368	3.3016	.88203	758	124.745	.000
	Photo 3	392	2.5638	.93580			
Stressful - Restful	Photo 17	366	2.0984	.73365	751	114.022	.000
	Photo 3	387	2.7416	.90502			
Artificial - Natural	Photo 19	369	3.1816	.94241	763	18.171	.000
	Photo 7	396	3.4621	.87790			
Boring - Interesting	Photo 19	365	2.6247	.76958	754	.781	.377
	Photo 7	391	2.5754	.76044			
Monotonous - Various	Photo 19	367	2.5995	.74313	759	11.314	.001
	Photo 7	394	2.4162	.75789			
Stressful - Restful	Photo 19	367	2.6294	.85508	756	1.519	.218
	Photo 7	391	2.7059	.85211			
Artificial - Natural	Photo 9	393	2.8295	.96041	753	115.984	.000

	Photo 18	362	3.5331	.82230			
Boring - Interesting	Photo 9	393	3.0433	.90951	747	37.001	.000
	Photo 18	356	2.6657	.77500			
Monotonous - Various	Photo 9	393	3.4020	.82758	754	148.892	.000
	Photo 18	363	2.6391	.89153			
Stressful - Restful	Photo 9	395	2.2228	.83453	751	49.891	.000
	Photo 18	358	2.6313	.74347			