DOI: 10.22616/j.landarchart.2021.19.08

# A traditional Japanese garden and its lessons for modern times

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Abstract. The study focuses on the origins and characteristics of traditional Japanese landscape design and its features. A comparative analysis of historical Chinese and Japanese horticultural traditions is carried out, as a result of which it is proved that in both cases the basis was religious syncretism with regional characteristics. A comparative analysis of Chinese and Japanese gardens has shown how, over time, they drifted further and further from each other, the Chinese garden continued to improve its hedonistic orientation, while the Japanese garden followed the path of maximum asceticism, the aesthetics of empty space, symbolism, that is, which helped maximize concentration and self-contemplation.

Keywords: Japanese garden, Chinese garden, influence, features, experience for modernity

#### Introduction

The most established idea of a traditional Japanese garden is that of the most ascetic "rock garden". However, Japanese landscape design is a much more complex, multifaceted phenomenon, in which Chinese influences are also felt, to analyze the similarities and differences between Chinese and Japanese gardens and show how historical landscape traditions can be useful in modern conditions.

In order to reach this aim, the review of traditional Japanese landscape architecture in comparison with related Chinese garden tradition was carried out; the main features of traditional Japanese landscape architecture were highlighted and their correspondences with contemporary sustainable landscape architecture trends were demonstrated.

An extensive block of publications by Chinese researchers was used, since many European and Russian scientists analyzed the landscape trends of the East from the standpoint of the European mentality and not always reasonably and correctly, respectively, of the Chinese or Japanese mentality.

The following publications in China have become basic: Li Chunqing [21], Wang Yi [42], Pan Jiaping [31], Tong Yu Zhe [37], Zhu Guang Yu [49], Jiang Zhenpeng [17], Xing Yue [44–45], Fang Liqiang [5], Huang Wei [11], Pei Yuansheng [32], Wang Guanglong, Zhang Hangling [41], Lou Qingxi [24], Zhou Weiquan [48], Liu Dunzhen [22], Zhao Guanghua, Qiu Mao [46], Zhu Junzhen [50], Fang Zhirong [6] and others.

Publications of recent years have also been analyzed, many of which are co-authored by European and Chinese scientists: the articles of M. Dyomin, A. Dmytrenko, Yu. Ivashko, M. Orlenko, T. Kuzmenko, D. Chernyshev and the Polish researcher D. Kuśnierz-Krupa [13–15, 29].

Sources for Japan are represented by the works of N. Brunov [3], V. Ovchinnikov [30], H. Shevtsova [36], N. Anarina and Ye. Dyakova [1], N. Vinogradova [40], Ye. Golosova [7–8], M. Ignatieva [12], S. Mostovoy [26], L. Lebedeva [20], N. Nikolaeva [27–28], as well as works of Japanese scientists M. Shigemori and K. Shigemori [35].

The material relevant to contemporary trends of sustainable landscape architecture was analyzed as well including M. Hemmati [10] research on the features of sustainable landscape architecture, the S. Kellert [19], W. Browning et al. [2], N. Salingaros [34] sources related to biophilic design, research related to ecological landscape aesthetics and its perception by M. Dekay [4] and the concept of sustainability aesthetics presented by S. Kagan [18].

Before proceeding to the analysis of the Japanese gardens investigated by the authors, one should turn to the characteristics of the Japanese garden, which N. Brunov cites in his book "Essays on the History of Architecture" [3]. It should be noted that a number of the provisions outlined in this book are, in the opinion of the authors of the article, debatable.

N. Brunov emphasized that the similarities between the landscape design of China and Japan are much more important than the differences [3]. In our opinion, this is undoubtedly true in relation to the philosophical and religious basis on which the landscape design of both China and Japan was formed, since Taoism and Shinto show many similarities in relation to the Universe and nature, the same is true in relation to Buddhism introduced into Japan from China: in China, religious syncretism was formed by three teachings – Taoism, Confucianism and Buddhism, in Japan – two – Shinto and Buddhism. At the same time, in ancient

China, each of the components of religious syncretism played a certain role in this symbiosis – ideological, emotional, or moral and ethical.

Since China had a really strong influence on Japan early, there is indeed a Chinese tradition in Japanese landscape design.

At the same time, a comparison of traditional medieval Chinese and Japanese gardens in terms of landscape techniques, imagery, emotional impression shows how far the Japanese have departed from Chinese traditions. There is no controversy and the thesis about the growth of Japanese art from more ancient Chinese at the early stage of the formation of Japanese art.

The same is true in relation to landscape design. N. Brunov emphasizes that the borrowing was dissolved in the regional peculiarities of Japan, creating its original variations on the basis of the traditions brought in from the outside [3]. Another feature of both Chinese and Japanese architecture and landscape design that he noticed is the inviolability of the canons, the stability of images and the continuity of traditions.

In China and Japan – and this is their commonality – a garden is not just an element of the environment for human relaxation, but an intermediate link between the Universe and nature as carriers of the ideal laws of harmony and a manmade artificial environment of architecture. That is why the garden pavilions seem to merge with the natural environment.

The purpose of this study is to analyze the origins of Japanese landscape design in different historical periods, to trace its relationship with Chinese gardens and regional identity, to identify and list the main landscape techniques and types of gardens. One of the tasks is to analyze the modern gardens of Japan in order to identify continuity and innovation.

#### **Materials and Methods**

Since the research topic directly covers the historical, philosophical, religious, and cultural aspects, this led to the use of traditional scientific methods of historical analysis (for the study and study of the historical situation, factors influencing the formation and establishment of sustainable traditions of landscape design) and religious analysis (since the basis of Chinese and Japanese landscape design are philosophical and religious teachings).

The method of comparative analysis was also actively used to compare the landscape traditions of China and Japan and the landscape traditions of different eras, which made it possible to determine their periodization. The method of photographic recording was also used on the basis of P. Zueva's natural survey of the gardens of Japan.

The specificity of the scientific approach to the analysis of the historical landscape design of

Japan in connection with the analysis of similar traditions in China required the simultaneous involvement of both sources devoted directly to the culture, architecture and traditions of Japan, and sources on the landscape design of China.

# Results and Discussion The Origins of Japanese Landscape Design: Controversial Positions

Today, there are many scientific sources devoted to the gardens of China and Japan. Based on the analyzed sources and the research conducted, the authors would like to focus on the main characteristics of traditional Japanese gardens and on those points in the literature that, in their opinion, are controversial.

According to the authors, the list of landscape techniques that N. Brunov lists, although it is correct, does not fully reveal all the features of landscape design from the point of view of philosophical and religious content.

In earlier publications of the authors and their co-authors, based on the study and analysis of Chinese sources on landscape design, a system of principles of landscape techniques in China was formulated [13–15]:

- a garden as an image of an ideal world, separated by a wall from the real world, the primacy of nature and the secondary nature of pavilions in the garden;
- the absence of distant perspectives and the division of space into separate landscape paintings, the constant change of which symbolized the ever-changing Universe;
- the semblance of ink landscape painting and similar landscape design techniques;
- the technique of miniaturization of existing natural landscapes (genre "urban mountains and groves");
- the technique of miniaturization of existing natural landscapes (genre "urban mountains and groves");
- the use of techniques "shang-shui" ("mountainswater", a well-known genre of Buddhist ink painting), "one lake three mountains" (a symbol of three immortals in Taoism who live on the mountains, under which the sea of immortality splashes, the lake is called the sea), "borrowing a landscape" (inclusion of mountains, pagodas, temples located outside the garden into the landscape picture), "garden within a garden" (a small garden with its own wall around it inside a large one), "landscape as a picture in a frame", "division of a landscape";
- poetization in the architectural form and the name of the artificial environment – garden pavilions;
- orientation of all pavilions with the main facades to the south;

the seasonality of landscape sceneries.

In our opinion, in the book of N. Brunov, a characteristic of a traditional Chinese garden is given from the point of view of a European, in addition, there are still differences between the landscape techniques of China and Japan. If we apply the characteristics given by him to a Chinese garden, then he lists the following signs [3]:

- a river flows through the garden, which is dammed:
- the shores are given pre-planned outlines;
- the pond is intended for boating (this is not always the case);
- a decorative bridge is thrown across the pond;
- there are islands in the pond. The contours of the islands are thought out in advance (in fact, this is subject to the rule "one lake, three mountains", it can be a pond or a lake, where the island with hills symbolizes the Taoist cult of the immortals);
- the forms of trees groups planted in different parts of the garden are also thought out in advance (groups of trees are subordinated to the specific landscape techniques we have formulated above);
- the views into the distance, opening at different points of the garden, were designed by the architect and included in the general compositional design (in relation to the Chinese garden, we have listed these techniques above).

With regard to Chinese and Japanese gardens, Brunov emphasizes the dominance of the curve in forms for maximum natural effect. He notes curvilinearity in such elements:

- the meandering shores of the pond, islands, transitions of stones between them;
- the outlines of groups of trees, picturesquely scattered over the garden;
- all these lines merge with the outlines of mountains in the distance, in which the picturesque curve also dominates;
- the same curved lines dominate the roof of the building;
- the buildings are only a part of the whole picturesque play of the garden and nature.

As the main element of the Chinese and Japanese gardens, N. Brunov singles out the bridge, which forms landscape pictures from different points [3]. The researcher emphasizes the philosophical and religious significance of the bridge, emphasizing that the bridge is an element that concentrates the waters of the dam before the further flow, and, like a bridge, all human emotions and human experiences are concentrated at a single point of reflection on eternal truth and the achievement of ideal harmony.

This view of the structure of the world and the place of man in it is closest to the schools of Buddhism with their denial of momentary human suffering on the way to enlightenment and comprehension of ideal life. It is in this analogy of natural phenomena and human emotions that the visibility of understanding the place of a person in the Universe lies.

In both China and Japan, not only architects, but also philosophers, poets, priests were engaged in landscape design, and it was the latter who brought the philosophy of Taoism, Confucianism and Buddhism into the traditional landscape, gave landscape paintings a hidden sacred meaning. Following China, these traditions appeared and acquired regional features in Japan. In both countries, traditional landscape design expresses the idea of full and maximum fusion with nature and the subordination of architecture to it.

In the early period, the Japanese garden borrowed entirely from ancient Chinese traditions. N. Brunov believes that since the Japanese garden appeared only in the 7th century, it turned out to be better studied than in China (according to some sources, the traditions of Chinese gardening traditions date back 25–30 centuries) [3].

The authors agree with this statement, which they proved when studying the history of garden pavilions in China: the dates of construction of most of the pavilions are unknown, at best, only the period of the dynasty is indicated.

N. Brunov identified three, in his opinion, periods of formation of the traditional Japanese garden [3]:

- 1) the first period of the VII–XIII centuries.
- 2) the second period of the XII–XIII centuries.
- 3) the third period: the second half of the 15th century.

Since in the future we will be based on this periodization, we will give the characteristics of each of these periods formulated by him.

In the first period, the Shinden style and the flourishing of landscape design in the Heian period (794–1185) are distinguished. In the miniaturization of real landscapes characteristic of this time, we can note the influence of the aforementioned Chinese genre "urban mountains and groves". Among the options for artificial islands in the garden of the first period, a mountainous island, a wooded island, an island with fields, an island near the seashore, an island in the shape of a cloud, an island with a sandy shore are named [3].

As you can see, there is a difference from the islands of Chinese gardens in such a list of island types among reservoirs. N. Brunov calls one of the features the types of water fall: contrast, lateral, abrupt, spiral, large mass, thread trickle, double, right and left, oblique. He believes that the main condition is the illumination of the water and the direction of the waterfall to the moon.

It should be noted that our study of Chinese sources on landscape design showed that the



Fig. 1. Byodo-in Buddhist Temple in Uji, near Kyoto. Phoenix Pavilion. Built at the end of the Heian period. The temple garden is built in the Jodo style, or the natural landscape style [photo by Polina Zueva]

methods of water falling in a waterfall are not analyzed in such detail there. For comparison, in the sources you can find references to specific effects in Chinese gardens — sound imitation of wind noise, echoes, birdsong or the noise of a waterfall.

Closer to the authors are the views of the researcher of Japanese architecture, the architect H. Shevtsova, who also calls the origins of Japanese landscape design the Heian era (784–1185) and sees these origins in traditional Shintoism [36, 128].

Like N. Brunov, she defines the gardens of this period as gardens at villas and monasteries with large lakes for boat trips (the gardens of the Bedo-in (Bedo-in Temple) in Uji (Fig. 1) and Dzeruriji in Kyoto) [36, 128]. The type of reservoir that reflects the Phoenix Pavilion is curious in its shape and is almost never seen in Japan. The island for such a body of water is extremely large, because Japan is characterized by wide bodies of water with small islands. This type of water body is widespread in China and is ubiquitous in the imperial parks and gardens.

Among the features of the first period of Japanese landscape design N. Brunov named symbolism, naturalism and symbolism of stones, the arrangement of which has a certain meaning [3]. Since the stones were considered alive, with the soul of a deceased hermit monk, they had to have a geometrically irregular shape. In Japan, moss-covered stones were the most prized.

Here it is appropriate to recall the importance of stones in China, where stones of a bizarre shape with holes were most valued: a hole was knocked out in the stone and it was placed in water, the water grinded the hole, thereby giving it features of naturalness.

N. Brunov names the most common types of stones in the gardens of Japan [3]: "turtle head" as a symbol of longevity, guard stone, moon shadow stone, "veil of fog" stone, shadow stone for playing fish, stone gorge with tigers, etc. etc.

And here begins a noticeable difference between the Chinese and Japanese gardens: the Chinese garden is always alive, although the stones play an important semantic role in it, they do not dominate, while in Japan there is a concept of a "dry" garden without trees and shrubs, only of stones. For example, in the treatise of the 15th century architect Seami, there is nothing but stones in an exemplary garden plan. The gaps between the stones are covered with moss, and the stones protect it from walking people, so the stones are located at a distance of a step from each other. If the paths were lined with small stones, inappropriate for walking on them, they did not walk on them, but admired from the pavilion.

Sinden is the main building in a traditional Japanese garden from this period, and the main viewing point for the garden. Gazebos and a boat while walking along the lake are also places of interest.

The second period of the XII-XIII centuries. significant changes characterized by to numerous inter-clan wars and the spread of Buddhism. It is thanks to Buddhism that such a specific role of the garden as a garden for meditation and self-contemplation manifests itself, that is, this new function of the garden changes the dominance of the garden for recreation and entertainment of the early period. This occurs during the Kamakura period (1185–1333). The bridge in the first period was adapted for a boat to sail under it, the bridge in the second period becomes adapted for walking in meditation, therefore it is built lower. On a pond or lake, people no longer ride boats, clean running water is replaced by standing water overgrown with marsh grass. They simply admire the pond, and all landscape paintings are calculated for perception not from a boat, but in the process of walking. The new orientation of the garden led to new landscape design techniques.

The third significant period for Japanese landscape design N. Brunov calls the 2nd half of the 15th century, when the main gardens are concentrated at Buddhist temples and monasteries [3]. This period is distinguished by the unity of landscape and pictorial prima, which, by the way, was typical for China and embodied in the Buddhist genre "shang-shui" ("mountains-water"). The postulates of Buddhism manifested themselves in landscape design in purity, in space, in the possibility of solitude and meditation. The garden, according to N. Brunov, is located on a hill, from its center to the outskirts the trees are thicker and higher, behind them there are mountains, and thus the garden on the hill merges with untouched nature with a gentle transition. H. Shevtsova also calls a special kind of garden "garden on a hill" (gardens of the Ginkakuji and Kinkakuji temples).

Large gardens also used for a tea ceremony, which was especially important for Buddhism. The semantic center of the "tea" garden is the tea pavilion with a smaller tea garden, separated from both the main massif of the large garden and the rest of the buildings. The flourishing of such tea gardens and the tea ceremony in general is associated with the Tokugawa period (1603–1867). Among the signs of a tea garden, N. Brunov singles out a hut-waiting for an invitation to a tea ceremony. He calls the emperor's summer residence Villa Katsuro in Kyoto (16th century) as a typical example of a garden with a similar layout [3].

Consequently, in both China and Japan, the geometrically correct outline of the pavilions is contrasted with the picturesque natural environment.

Although traditionally the Japanese garden is considered more minimalist in relation to the Chinese garden, N. Brunov emphasizes that along with the ascetic Zen gardens, there were also picturesque secular gardens. He identifies four main types of Japanese gardens [3]:

- "Funa asobi" "pleasure boat" (gardens of the Heinan era, most often around the houses of noble families with an extensive pond for boating;
- "Shuyu" "walk" (gardens of the era of Heinan (794–1185), Kamakura (1185–1333) and Muromachi (1333–1568) around houses and temples for viewing from a winding path from which different views open);
- "Kansho" "contemplation" (stone gardens of Zen Buddhism of the Muromachi period, intended for contemplation from one place, the stones of which cannot have a clearly formulated and expressed in words symbolic meaning, the second name is "dry mountains and waters");
- "Kayu" "variety of pleasures" (gardens from many small gardens, with several tea pavilions by the ponds, a view of the garden for walking and guessing poetry lines in landscapes).

The following types of Japanese gardens are given in the monograph by H. Shevtsova: gardens with large ponds for boat trips, stone Zen gardens for contemplation and meditation, gardens on hills, tea gardens, a garden for contemplation from the pavilion, and not for walks [36, 128–130].

Between the Chinese and Japanese gardens, in addition to the similar philosophical and religious origins of animistic religions and Buddhism, there are similarities in certain landscape techniques (first of all, if we talk about Japanese gardens for relaxation and walking, and not for meditation), as well as in similarities with poetry and with the genres of ink painting and with calligraphy, which was equally highly valued in China and Japan.

A number of landscape techniques, such as highlighting the main and the secondary, the

subordination of architecture and small forms to the created landscape environment, the use of the play of light and shadow, the embodiment of real landscapes in miniature, can be found in both Chinese and Japanese gardens.

A certain similarity is also present in the types of garden elements in China and Japan – such elements are water (lakes, ponds, streams), natural rough stones of irregular shape, living plants and trees, with the peculiarity that water moves in a Chinese garden, and in a Japanese garden in the second period, running water is often replaced by stagnant marsh, overgrown with marsh grasses and flowers. If we talk about the sacred symbolism of stone in landscape design, then in China, it is a symbol of the masculine principle of Yang with water with the symbolism of the feminine principle of Yin, in Japanese Zen Buddhism - the embodied soul of a holy hermit, and stones covered with moss were especially revered. Both in China and in Japan, a stone of the most natural form, not processed by a master, was especially appreciated.

However, a comparative analysis of the types of gardens in China and the above types of gardens in Japan shows how the regional characteristics of the Japanese garden have manifested themselves over time. In China, we can distinguish primarily the imperial gardens, tomb gardens, private gardens, temple gardens. On similar principles, the so-called "gardens of natural landscapes" were formed, natural areas with pavilions in forests, mountains, on the banks of rivers and lakes, which, although they were not gardens, however, they used similar landscape techniques of the pavilion in the natural environment, with the only reservation that landscape paintings in this case were created not by human, but by nature itself, and human only used their expressiveness and enhanced it with the architecture of the pavilions.

Most researchers of Chinese landscape design emphasize the generality of landscape techniques in both large and small gardens, where similar landscape paintings were reproduced simply on a smaller scale and with greater detail. On the contrary, according to the list of Japanese gardens given by N. Brunov, it can be noted that in Japan there were several rather different types of gardens, which, although they had a common basis, were different functional and visual implementation. However, Zen rock gardens also have an echo of Chinese temple rock gardens, although they were not as popular as in Japan. Examples are the "Garden of Ten Thousand Stones" and the "Mountain Abode of Rough Stones" by the Shi-tao monk. Another significant difference between a Chinese garden and a Japanese garden is that the Chinese garden was designed to be viewed from different points as we moved through the garden, when landscape paintings were constantly changing and created the

feeling of an ideal natural space for pleasure, while Japanese gardens ("Kansho") were not intended for walking and were viewed from one place, and there was no change of many different landscape paintings in them, they differed in symbolic sacred minimalism and were aimed not at pleasure, but at inner concentration.

In the Chinese garden, there are no grassy lawns familiar to Europeans, just as there is no tradition to preserve the moss cover, as in Japan.

V. Ovchinnikov gave a remarkable description of the Japanese garden, especially emphasizing its non-identity with the Chinese garden: "No matter how great the commonality of the cultures of Japan and China, here they are fundamentally different. The pathos of Chinese art affirms the omnipotence of human hands. The Japanese artist does not dictate his will to the material, but reveals the beauty inherent in it" [30]. This difference also lies in the theoretical canons of beauty formed in Japan, developed on the basis of the syncretism of Shinto and Buddhism [30, 40–41]:

- "- Sabi beauty is equal to naturalness. Charm with traces of age. Literally means "rust", the charm of antiquity, the stamp of time. Sabi is the connection between art and nature.
- Wabi is a bridge between art and everyday life. The beauty of the ordinary, the beauty of simplicity. Lack of catchy, pretentious.
- Shibuy is what a person with good taste would call beautiful. This is the beauty of simplicity plus the beauty of naturalness. The beauty inherent in the purpose of the object, inherent in the material from which it is made. With the minimum processing of the material the maximum practicality of the product. Continuity in art is reflected not in form, but in content.
- Yugen embodies the skill of a hint or subtext, the beauty of reticence."

These canons of ideal beauty are different from the canons of beauty in China. In China, there is literally no Sabi in landscape design - rapture with obvious traces of antiquity, mossy stones, all landscape paintings are in the nature of wellgroomed. Wabi – the beauty of the mundane is also alien to the Chinese garden, aimed at enjoying carefully selected beautiful landscapes, even if it is not a man-made landscape. Shibuy in Chinese landscape design, although partly present in admiring natural stones, however, the wooden structures of the pavilions, although made of natural material, are at the same time covered with exquisite carvings and brightly colored, and even holes in the stones were originally skillfully punched by a human hand, and only then began the case was completed by water, giving the holes a natural look. Shibuy principles are present in their purest form in China only in some simple remote mountain arbors with a thatched roof and wooden structures with the color



Fig. 2. The Philosophical Garden (Karesansui Dry Garden or Rock Garden) at Ryoanji Monastery. Ukyo District. Kyoto [photo by Polina Zueva. The 15th of stones are located on a rectangular area of 25 meters, among pure white gravel]

of natural material. Yugen in the Chinese version is embodied in the symbolic meaning of individual elements of the Chinese garden – in the symbolism of "one lake, three mountains", in winding indirect paths to block the path of erect evil heavenly spirits, in the allusion of a landscape and verse lines, etc., however, this all the same allegory and hidden meaning associated precisely with local beliefs.

The glorification of the variability and impermanence of the Universe in China and Japan took place in different ways: in Japan, this symbol was the three stages of cherry blossom (the first flowers, full color, falling of petals, of which the stage of falling of petals was most appreciated), in China in garden design this variability was expressed through the constant alternation, as in a kaleidoscope, of landscape paintings.

V. Ovchinnikov noted an important feature of the traditional art of Japan, based on asymmetry as an expression of the perpetual motion and circulation of phenomena in nature: asymmetry denies pairing [30, p. 43]. China should be mentioned here, where sculptures often stand in pairs, especially symbolic sculptures of a lion with a ball under its paw and a lioness with a lion cub under its paw, vases are paired, etc.

V. Ovchinnikov writes: "The highest concept of Yugen can be considered a poem made of stone and sand, called the philosophical garden. Tea master Soami created a philosophical garden at Ryoanji (Ryoanji Temple) in Kyoto (Fig. 2) 400 years before the modern language of abstract art.

Stones on white gravel in the garden – to feel the true meaning of such creativity, its asymmetric harmony, which expresses the universal essence of things, the eternity of the world in its endless variability" [30, 43]. This reveals another feature of the traditional Japanese garden and its difference from the Chinese garden – monochrome and the absence of living plants for creating a garden – an experiment that was subsequently continued by the European avant-garde.

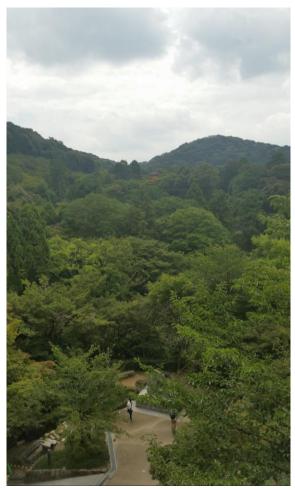


Fig. 3. The picturesque garden of the Kiyomizu-dera temple complex. Kyoto [photo by Polina Zueva]



Fig. 4. Eikando Temple Garden. Humpbacked bridges connect the pavilions. Kyoto [photo by Polina Zueva]



Fig. 5. The eastern rock garden of Nanzen-ji, the garden of the Hojo (abbot's chambers) is 70 % gravel and is characterized by maximum naturalness. Kyoto [photo by the author Polina Zueva]

Despite the prevalence of the ascetic type of "dry" Zen garden in Japan, there are other types of gardens in Japan, among the greenery, with pagodas and temples.

#### Characteristic historic gardens of Japan

The most famous gardens in Japan are the gardens at temples and monasteries, among the many of which we will name five characteristic.

#### Temple gardens

1. Garden of the Buddhist temple complex Kiyomizu-dera (清水寺) is otherwise — Otovasan Kiyomizudera (音羽山清水寺) known as Otovasan Kiyomizudera, Higashiyama district in eastern Kyoto (Fig. 3).

The complex was originally founded in the 778, but the surviving buildings are later, in the 1633. The main buildings are located at the average the slope of Mount Otova. To the south of the main temple (and there are several of them here) there are three streams that bear the symbolic name "Otov waterfalls" to the south of which there is an area with the poetic name of the Valley of Brocade Clouds. The entire territory of the monastery has been turned into a picturesque park.

- 2. The garden of the Buddhist temple Eikan-do in Kyoto is part of the territory of a complex of several pavilions connected by bridges, a park area, a traditional rock garden and a pond with carp (Fig. 4). The temple is famous for the statue of Mikaeri Amida (looking back Buddha Amida).
- 3. The garden of the Zen Buddhist temple Nanzen-ji (南禅寺) of the Rinzai school in Kyoto can be called a temple complex, because on its territory there is a functioning monastery and the 12th more temples of the Rinzai school. It was founded by Emperor Kameyama in the 1291 on the site of his previous palace. The Chinese influence was expressed in the fact that at the beginning of the XIV century the abbot of the monastery was a master from China Ishan Yining. On the territory of the Nanzen-ji temple there are four gardens, three of which are made using the dry garden technique karesansui. One of the gardens is believed to have been made by the master Kobori Enshu in the 1629 and is a typical example of a Zen garden from the early Edo period. Garden views can be enjoyed from the long wooden deck.

The laconicism and harmony characteristic of Zen dry gardens unites space and stones into a single whole (Fig. 5).

4, 5. Gardens of Konchi-in Monastery as part of the Nanzen-ji temple complex in Sakyo-ku. The monastery suffered in the 15th century during the war, until the 17th century it was destroyed and rebuilt in 1600–1605 through the efforts of the abbot Isin Shuden, who commissioned Kobori Enshu to design two monastery gardens: the Konchi-in garden – "Crane and Turtle" and the garden in front of the



Fig. 6. Rock garden "Crane and Turtle", the proper name "Tsuru-Kameno-niva", Konchi-in monastery as part of the temple complex Nanzen-ji. Kyoto [photo by Polina Zueva]



Fig. 7. Plan of the Shugakuin Imperial Villa. Upper villa. Medium villa. Lower villa [photo by Polina Zueva]



Fig. 8. View of the "Bathing Dragon" pond from the pavilion of the Upper Villa [photo by Polina Zueva]

main temple of the Nanzen-ji monastery. Both gardens were the embodiment of the landscape traditions of the Muromachi period (1333–1568). There are traditions of a garden like karesansui ("dry mountains and waters"), for which the stones were carefully selected according to their shape, color, texture, and correspondence to the style of the complex. It was during the Muromachi era that the first rock gardens appeared – karesansui and sikichyo (stone garden).

The "Crane and Turtle" rock garden, its own name "Tsuru-Kameno-niva" (Fig. 6), was designed by Kobori Enshu in 1627–1632, an innovation was the observation of the dry garden, not as usual, from the terrace of the temple, but from the stone bridge in front of the temple, that is, the original concept of the "rock garden" was deliberately changed – viewing from only one point and from one angle, here there is a view from the side and frontal, from the terrace of the temple.

It is from the terrace that the whole idea of a "rock garden" is most fully revealed, a very elongated garden with a massive group of stones on the left (they symbolize a turtle) and an old juniper tree located above these stones – a symbol of Zen Buddhism.

Symmetrically and almost in line with the turtle group, there is an even more massive group of rocks with straight geometric edges, which symbolizes the crane in flight. Also beautifully trimmed large camellias and rhododendrons of a round, slightly flattened shape represent the shell of a turtle, and tall pines in the background, individual plants and stones bear the image of a crane.

#### **Imperial Gardens**

1. The garden of the imperial villa Shugakuin (Shugakuin) on the northeastern outskirts of Kyoto was planned at the behest of Emperor Gomitsuno. The first stage of the garden planning continued from 1656 to 1659, then, with a break, the work continued for several more years. The uniqueness of the garden and its difference from other gardens in Japan lies in its terraced location on three terraces along the mountainside, with a villa on each terrace, which led to the specific layout of the ensemble (Figs. 7, 8).

As in the historical Chinese gardens, the technique of "borrowing the landscape" (in Japan "sakezi") acquires a special role here, that is, the inclusion of distant perspectives of mountains and greenery in landscape paintings, there was a clear division: the distant planes were formed by natural elements, the foreground - by man-made. The challenge was to create a contrast or fusion of these two plans. Commonality with calligraphy and the genre "shang-shui" reveals the outline of the reservoir and the composition of the waterfall of the upper terrace; however, for all the skill of drawing foregrounds, the most appreciated picturesque perspectives of plans, reminiscent of Buddhist ink painting.

There are also similarities between traditional Japanese painting and landscape paintings: from the Rinuntei Pavilion ("Near the Clouds"), a view opens up that resembles paintings of the 15th century, there is a large curved tree and bushes in the foreground, with a slight mountain silhouette in the distance. It is precisely because of the similarity with murals and painting that researchers note the "theatricality" of landscape paintings.

Unlike the ascetic Zen rock gardens, there is a technique of alternating landscape paintings – a combination of a man-made foreground with gardens, moss-covered and stone paths, a waterfall and several ponds for boating and a miraculous background.

### Signs of a traditional Japanese garden

The origins of the Japanese garden date back to the emergence of the formation of the Yamato State and the adoption of Buddhism in the 6th century, and the very appearance of the ancient and medieval gardens indicates the existence of cultural ties between Japan, China and Korea. The formation of landscape gardening art in Japan was significantly influenced by the system of worldview, in which Buddhism occupied the most important place. The philosophy of Buddhism in conjunction with the sacred attitude of man to nature, which was determined by the national religion Shintoism, led to the emergence of a garden characteristic only of Japanese culture and the development of specific volumetric-spatial and artistic thinking in working with space and natural materials.

During periods of relative isolation of Japan on the basis of artistic and technical borrowings from China and Korea until the middle of the 19th century. developed their own traditions of gardening and landscape art.

In the course of historical development, several types of gardens have formed:

- The court aristocracy created the landscape gardens of the shinden-zukuri;
- Followers of the teachings of Zen Buddhism developed "dry" gardens (karesansui);
- 3. Representatives of the military class laid the foundations for the development of multifunctional gardens;
- 4. Tea connoisseurs cultivated tea ceremony gardens (roji);
- 5. Craftsmen and traders brought to life small gardens (tsuboniva).

With Japan's entry into the capitalist phase of development, the garden was heavily influenced by the landscape design trends of the Western world.

According to modern research, the development of Japanese gardening art is divided into stages [36]:

- 1. 6th 7th centuries, the Asuka period, marked by the reproduction of ancient Korean gardens.
- 8th 12th centuries, the periods of Nara Heian, are associated with the formation and development of the aesthetic foundations of landscape and landscape art and the creation of a type of garden based on Chinese borrowings.
- 13th 16th centuries, during the Kamakura Muromachi periods, there is a transition from manmade landscape and landscape compositions to "dry" ones, called Karesansui gardens and associated with the worldview of Zen Buddhism.
- 4. Second half of the 16th mid-19th centuries, the periods of Momoyama Edo, the heyday of extensive daimyo gardens with complex layouts, garden and park ensembles of imperial palaces and villas, gardens of tea ceremonies and chamber gardens of city dwellings. This era is considered the highest flowering of Japanese landscape design.
- Late 19th early 21st centuries, Meiji period up to the present, the formation of the Japanese garden passes through the synthesis of the cultures of the East and West and is marked by the process of

transition from tradition to modernism. During this period, the first public garden and park complexes appeared and Western approaches and techniques were used in the planning of Japanese gardens and parks.

Throughout the development of Japanese landscape design, architecture has determined the proportions of the Japanese garden and its space. The artistic appearance of the gardens and parks was shaped by painting and aesthetics. Their plot-like content was associated with national literature.

Having identified the stages of Japanese landscape design, one can trace the main trends in the development of national garden art and its relationship with architecture, fine arts, literature, aesthetics of Japanese society. A garden in Japanese culture throughout its history has remained the quintessence of the unique connection between human, nature and religion.

# Lessons of traditional Japanese garden for contemporary landscape architecture

Continuity and sustainable adaptations of traditions, maintenance of the spirit of place and empathy for the place very often become the stimuli for sustainable social and economic processes. According to M. Vecco [39], such intangible category as spirit of place may have significant impact on sustainability of the locality. Contemporary UNESCO heritage preservation policy expressed by the concept of historic urban landscape also encourages to look for the sustainable development patterns in the local heritage. In this light the peculiarities of Japanese gardens highlighted in the perspective of comparison with Chinese tradition can become a valuable source of inspiration for meaningful and sustainable contemporary landscape design.

Modern parks in Japan speak about the resilience of Japanese landscape traditions, a classic example of which is the Namba Park, created on the site of a baseball stadium in Osaka in 2003 by the architect Jon Jerde, which has already been called the "modern hanging gardens of Babylon", adding natural features to the rigid planning structure of modern buildings (Fig. 9).



Fig. 9. Modern garden Namba Park. Osaka. Created in 2003. The landscape architect of the project, Jon Jerde, proposed integrating a huge green park into the rich and tough environment of the metropolis.

View from the terrace [Photo by Polina Zueva]

Namba Park is, in fact, a multifunctional complex greened with exotic plants and trees with a Parks Tower business center, a shopping center, an entertainment area, an art space, a modern residential complex and picturesque, interconnected terraced park areas with waterfalls, green lawns, water bodies and cliffs on eight levels of a modern complex. This design solution is especially relevant for a super-dense urban environment. The construction of the complex took place in two stages: the first part with an area of 297,000 m<sup>2</sup> was opened in 2003, the second  $-75,000 \text{ m}^2 - \text{in } 2007.$ Greenery occupies an important part of the territory - these are terraced parks and greenery on the roof of the Parks Tower business center. In fact, free access to a modern botanical garden with over 70,000 seasonal plants and 300 trees was opened.

Thus, listing and reviewing selected examples of Japanese gardens located in Kyoto: Thus, listing and considering selected examples of Japanese gardens located in Kyoto: the philosophical garden at Ryoanji monastery, the garden of the Kiyomizu-dera Buddhist temple complex, the garden of the Eikando Buddhist temple, the garden of the Zen Buddhist Nanzen-ji temple of the Rinzai school, the Hojo garden in the Daitokuji Monastery, the Konchi-in Monastery garden within the Nanzen-ji Temple complex in Sakyo-ku, the Shugakuin (Shugakuin) Imperial Villa Garden on the northeastern outskirts of Kyoto, and the modern multi-level Namba Park 2003 in Osaka, of note, that modern landscape architects actively use the centuries-old achievements of national garden art, combining ancient compositional traditions with modern solutions, materials and forms.

The above-presented analysis of historical and contemporary Japanese gardens in comparison to traditional Chinese landscape architecture revealed numerous correspondences with contemporary sustainable environmental design trends: biophilic design, sustainability aesthetics, environmental aesthetics etc. Below we present several points of potential integration of traditional and contemporary aspects in landscape design based on analyzed Japanese garden traditions.

Biophilic design. Biophilic design is quite recent approach aimed at bringing nature into the artificial human habitat and creating nature inspired environments for humans. According to the proponents of biophilic design such as S. Kellert [19], W. Browning et al. [2], N. Salingaros [34], natural elements, materials, and patterns in our living and working environments contribute to human well-being and health. According to N. Salingaros [34], positive effects of biophilic design are conditioned by: "close proximity and visual contact with plants, animals, and other people and positive response to artificial creations that follow geometrical rules for the structure of organisms".

The analysis has revealed that various features and patterns contemporarily attributed to biophilic design are abundant in traditional Japanese garden design — light variations, creation of miniature landscape features, bringing nature into the city, using naturaly shaped irregular stones, preserving moss etc. — and can serve as a source of inspiration for present day landscape designers.

Less tangible consumption. Currently numerous thinkers in the field of sustainability underline such notions as less tangible consumption, green consumption etc. as for real transition towards sustainability the shift of consumerist mindset towards more spiritual direction is required. The idea of contemplation of garden made of mere natural elements, sometimes of just gravel and stones, can be seen as a higher form of sustainable consumption desirable in contemporary societies. Landscapes aimed for contemplation could become desirable practice in contemporary garden design as well. Garden is a perfect place for contemplation of such concepts as permanence and temporariness. Moreover, the study of ecological aesthetics perception by M. Dekay [4] has revealed five levels of aesthetic perception related to the visual, sensory perception, experience of the place and the wider knowledge and understanding of ecological connectedness and evolution. The possibity of multilevel perception of traditional Japanese garden related with religious and philosophical concepts can serve as a source for inspiration for creating contemporary landscape designs enabling the perception and appreciation at multiple levels. This is relevant in the general context of post-modernist design where the designed object is aimed ,,to speak multiple languages" as well.

Co-creation with nature. According M. Hemmati [10] "mimicry of natural process is more important than the mimicry of natural forms" in contemporary sustainable landscape architecture. Still water swampy ponds with vegetation in traditional Japanese gardens can be seen as the example of re-creation of natural ecological processes. Moreover, co-creation together with nature is characteristic to contemporary ecological art and sustainability aesthetics movements as well as it was underlined by S. Kagan [18]. These ideas correspond very well with traditional Japanese beauty concepts sabi and vabi focused at the beauty of aging and everyday aesthetics.

# Conclusion

The result of the presented study was a comparison of the features of landscape design in Japan at different periods, a concentrated description of the types of characteristic gardens and an analysis of their influence on modern landscape design in Japan. The authors identified a number of controversial provisions in the existing scientific approaches of different researchers.

The study of the origins and originality of Japanese landscape traditions in comparison with Chinese garden and park principles proves the existence of both commonality between them and regional differences. Without a doubt, Chinese gardening art formed the basis of Japanese landscape design, especially in the early period, because in gardens Japan there are and landscape paintings created according to Chinese models. The commonality between Chinese and Japanese gardens is primarily in the philosophical and religious basis and syncretism of local animistic religions and Buddhism.

At the same time, both the culture of China and the culture of Japan have always been so strongly distinguished by regionalism that any traditions introduced from the outside were sooner or later transformed on the national soil into something else. The same is true for Japanese gardens: they gradually expand the list of gardens, temple gardens for contemplation and meditation are added to gardens purely for relaxation and entertainment (the latter took place in China, but they did not become the most famous types of gardens in China).

The spread of Zen Buddhism in Japan globally modified the concept of a garden borrowed from China as a paradise on Earth for a pleasant pastime and strengthened, accentuated precisely the philosophical, moral side of human existence. Today, in conditions of environmental problems, we increasingly turn to the experience of the countries of the East, where the traditions of harmony of architecture and natural environment have been developed and improved.

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