A Brief Analysis on Application of the Half Pavilion in Garden

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Abstract. The half pavilion exists as a special form of pavilion, and its application is the perfect interpretation of Chinese traditional philosophical thought of “harmony between the heaven and human” in the gardens, which is the crystallization of the wisdom of ancient people. In the Chinese classical gardens, the particularity of the half pavilion gives viewers a sense of experience with thousands of pavilions. Every scene and every half pavilion has a new experience and aesthetic feeling. In addition to its own aesthetic value, the external shape of the half pavilion is also of exploratory significance in its integration with the surrounding environment, showing its concept of adapting to local conditions, harmony between the heaven and man, and interacting with the surrounding environment. This paper studies the half pavilion preserved from ancient times in the Chinese gardens, and explores from the external characteristics of the half pavilion and spatial layout of the gardens. In terms of how to use it in the gardens, so as to find inspiration and provide new heuristics for modern designs.

1. Overview of The Half Pavilion
The pavilion is a traditional Chinese building from Zhou Dynasty. “The pavilion is stable for people. It has floors.” (Shuo Wen Jie Zi) The pavilion, first appeared as a place to relax for passers-by, often built on the roadsides. [1]“Pavilion, also means to stop. People stop and gather.” (Shi Ming) The pavilion is generally an open structure, and there is no shelter in the visual, as a result, the pavilion is not only a place for pedestrians to rest, but also derived from the use of viewing. The architectural design of the pavilion largely depends on two aspects, one is the objective natural environment in which the pavilion is located, and the other is the subjective consciousness of the builder. In this way, according to the function, form and material of different varieties of the pavilion, that is, the design of the pavilion "zao shi wu ding". For example, the three-dimensional roof form, the shape of the plane and the combination of pavilions can be designed in different forms. The half pavilion is in which evolution, innovation out of a kind.

The half pavilion, a kind of pavilions, which usually attaches to walls, corridors or natural rock walls and stone cave buildings. [2] In the Illustrated Dictionary of Chinese Architecture written by Wang Qijun, which refers to "semi-mountain pavilion" is a kind of pavilion built on the basis of other buildings. It can be built on the basis of buildings or walls, so it can be built into half a pavilion, and
so it is named semi-mountain pavilion. [3]This kind of pavilion is in accordance with the natural situation, often cut off the building on the side of wall, and harmoniously integrated with the environment, forming a natural half pavilion. Therefore, this kind of pavilion is called half pavilion. As shown in Figure 1, the hexagonal pavilion changes into a "four-corner pavilion", with the wall bearing the weight of the hidden part.

2. Application of The Half Pavilion in The Gardens
Throughout the development history of the entire garden, it is not difficult to find that the location and shape of the pavilion buildings tend to be free during the construction of the garden. For the design of the pavilion in the garden art, that is, there must be a scene in the place where it is built. This is the pavilion in the landscape and the landscape in the pavilion, and they are the complements of each other’s. Equally, the application of half pavilions in the gardens is the same. It is mainly reflected in two aspects: one is the spatial role of the half pavilion in the overall garden architectures, and the other is the external shape of it and the use of its materials in the gardens.

2.1. Different Spatial Layouts
The design of the half pavilion will be based on walls, corridors or natural rock walls, stone cave buildings and other “auxiliary objects”. “Auxiliary objects can be distributed in all corners of the garden. The spatial layout of the half pavilion in the garden is mainly showed in the following ways.

2.1.1. Building pavilions from a height
Setting a half pavilion at the highest part of the whole garden will not only enrich the level of the scenery in the garden, but also make the whole environment closer to nature. For instance, in the Xiahuang Building(As shown in Figure 2) in Three Lanes and Seven Lanes, Fuzhou, a half pavilion is set at the corner of the second floor, and the half of the pavilion is integrated with the wall. The waist is one sided, and the top is half a mountain. Located in the high place of the countryside, the view is very wide. From top to bottom, we can feel a peaceful and deep combination of rockery, pool and plants. The landscape effect is excellent.[4] In modern times, the mountain pavilions in some scenic spots have evolved following the method in setting pavilions from a height. For example, the Wangfeng pavilion(As shown in Figure 3) is located in Stone Forest in Yunnan, which chooses a place with the best view of the scenery, and we can furthest enjoy the view of the relative range of scenery, watch all scenery in whole garden and perceive all things of nature.
2.1.2. Featured Set of Scene
If constructing a half pavilion with a feature landscape often has unexpected visual effects. Built in the Shunde lunjiao mingshi Garden (As shown in Figure 4) in the Guagxu period, traditional half pavilions of Lingnan in the gardens (As shown in Figure 5) were combined with a Western-style mansions and a Baroque archway. The architectural styles between East and West, collide and blend in each other, appearing very unique and building the space that gives suitable and layered levels to feel in all round.

2.1.3. Buffer Space
The half pavilion is placed around the corner, whose construction is to relax the rigidity of the corner space and give it life. The half pavilion can be added skillfully in the dead space such as walls and corridors in the garden. For example, there is the pavilion leaning rainbow (As shown in Figure 6) in the garden, whose half pavilion is backed by a white-washed wall. The walls act as water fronting a blank space, where we can see sparkling water. Flowers, trees, rocks, and waterscapes from far to near, like the foreground, middle and distant view in natural landscape painting. The Cold Spring Pavilion not only expands the spatial visual effect of viewers' waterscape, but also integrates the white wall with the surrounding scenery, increasing the spatial dimension of scenery appreciation and making people feel as if they are in the real nature.

The spatial processing of the half pavilion is relatively flexible, and the layout of the garden will be adjusted according to the environmental conditions and the designers’ subjective emotions. Therefore, there is no fixed pattern for the location of the half pavilion. Every pavilion has a view is what ancient people pursue. The essence the design of the half pavilion is to fully integrate with the sounding objective natural environment, so as to achieve the “harmony between the heaven and human” between the natural environment and the artificial landscape.

2.2. Design and Application of The Half Pavilion
The design and application of the pavilion are mainly showed up in three aspects: the first aspect is the external shape of the half pavilion, which is diverse, and mainly reflected in the shape of the top and its flat shape. The second is the integration and size of the half pavilion with other buildings, and the location and size ratio of the half pavilion in the garden are adapted to local conditions. The third is the building materials of the half pavilion, and most of the remaining half pavilions use wooden materials.

### 2.2.1. Abundant and Various External Shapes

The external shape of the half pavilion can be divided into the top shape and plane form. The forms of its top have round pavilion roof, gable and hip roof, round ridge roof, round ridge and gable and hip roof and so on (As Shown in Figure 7). Among them, a pavilion near the main building of the Yan Hua Pond in Chengdu is a round-pavilion-roof half pavilion, accretion for a cusp, the top focus on a point. [6] The cusp and its upturned cornice give the viewer a dexterous and gorgeous look. There are also the Cold Spring pavilion in the Master-of-Nets Garden, the half pavilion of the Lion Forest Garden, Royal Tablet Pavilion and the Wen Tianxiang tablet pavilion, the Yu yan pavilion of the Grace Garden, etc.

**Figure 7.** Respectively is: round pavilion roof, gable and hip roof, round ridge roof, round ridge and gable and hip roof (Figure 7Source: http://rollnews.tuxi.com.cn/zjj/197521999fqz784613.html)

There is no main ridge on the round ridge roof, and the ridge part forms a curved surface, which is a gable and hip roof. For example, the Yi hong Pavilion, which is located on the south side corridor of the Wu zhu in the Humble Administrator's Garden. The curved line at the top gives the viewer a smooth and gentle feeling, and there is a sense of comfort without edges and corners. In addition, the half pavilion of the round ridge and gable and hip roof is also common. There is no obvious main ridge at the junction of two front and back slopes, which is an arc surface. The Yuzhao Pavilion (As shown in Figure 8), located in Meixi, the outline of the pavilion is clear, and pavilion top protruding corridor roof, and the distance of the cloud peak combined. [7] Its soft curve at the top gives people a sense of vitality and intelligence. The "Junzisuolv" Pavilion in the Lingering Garden in the Jiangnan Garden, the Zhenqu Pavilion (As shown in Figure 9) in the Lion Forest Garden, the Hanqing Pavilion (As shown in Figure 10) in the Humble Administrator's Garden and the Master-of Nets Garden are located in the east of Caixia Pond, and the Duck Shooting Corridor Half Pavilion in the west of The Zhuixiu Mansion are also the round ridge and gable and hip roofs.

**Figure 8.** Yuzhao Pavilion in Meixi  
**Figure 9.** The Zhenqu Pavilion  
**Figure 10.** The Han Qing Pavilion

(Figure 8 Source: Cheng Jianyue. Huizhou New Garden Creation Experiment _ Multi-Landscape garden _ Meixi _ Scenic area design _ 1986(01):74.) (Figure 9 Source: http://baijiahao.baidu.com/s?id=1659885587941586592&wfr=spider&for=pc) (Figure 10 Source: http://www.nj700.com/v15.html)
Viewed from the plane, most of remaining half pavilions in the garden have square forms, while a few have natural triangles, natural quadrangles and combined pavilions. The planar form of most of the half-pavilions is square, which represents the Cold Spring Pavilion in the Master-of-Nets Garden, the Yau Yat Tsuen Pavilion in the Lingering Garden, the Shuangxiangxian Hall in the Lion Forest Garden, and the Get Reality Pavilion in the Humble Administrator’s Garden. The half pavilion with the plane form of natural triangle has the Pavilion of Wen Tianxiang Tablet in the south of the Lion Forest. A natural quadrangular half pavilion for the garden of Yu Yan Pavilion. The plane form is two combinations of the half pavilion have Han Qing Pavilion of the Humble Administrator’s Garden. In a word, garden designers usually apply the shape of half pavilions to the garden design flexibly according to the characteristics of the shape and the emotional characteristics given by the shape. The rich architectural forms can provide some references for the subsequent designs and become new inspirations for other architectural and public art designs.

2.2.2. Designs That Adopt Measures Siting Local Conditions
It refers to the combination of the half pavilion with other buildings and the relative scale of the half pavilion in the garden. The half pavilion is not very common, generally used in gardens limited by space, with corridors, rockeries, garden gates, walls and other structures appearing in groups. (As shown in Figure 11 and 12) In the design, it is necessary to consider the integration with the landscape environment and balance with other buildings. The half pavilion is often connected with the corridor and built along the wall. Like the pavilion of Royal Tablet in Lion Forest, it is a node in the winding corridor. Visually, the combination with the corridor not only does not affect the continuity of the corridor, but also breaks the single form, enriches the shape of the corridor, highlights the primary and secondary relationship between the two, and enriches the relationship between virtual and essence. The half pavilion can also be combined with the garden gate. The intersection of the two is often a half pavilion, which can play an important role in the entrance of the building. In the courtyard in front of the staircase and cloud room in the Master of nets Garden, a half pavilion is adopted to connect the entrance of two garden gates in the corridor along the wall. [9] A spatial transition is implied here, suggesting that the visitors are about to enter another space.

![Figure 11. Half pavilion and garden gate](Figure 11 Source: The author homemade)
![Figure 12. Half pavilion and rockery](Figure 12 Source: The author homemade)

The overall scale and scale of the half pavilion will vary according to the surrounding environment. The key point of the design is that the proportion is appropriate and the volume is appropriate. If the environment of the half pavilion is empty, and the view is wide, then the size of the half pavilion is also larger, the space design will be more spacious. In this way, the volume of the building is enhanced and acts as an extension. If the half pavilion is located in a narrow environment with compact scenery and terrain, then in order not to "steal the show", the size of the half pavilion will be smaller. The purpose is to adapt to the surrounding environment, break the sense of spatial occlusion in the narrow place, achieve a harmonious and unified effect with the natural environment, and give people a more perfect landscape experience.

2.2.3. Commonly Used Materials
The pavilion is made of a wide variety of building materials, mainly bamboo, wood, stone, glass, thatch, pottery, bark, metal, and modern reinforced concrete. The remaining half pavilions were made
of wood. For example, the “Tingtao” Pavilion in the west corridor of the Lion Forest, the Duck Shooting Corridor Half Pavilion of the Master-of-Nets Garden, the Yu Yan Pavilion of the Grace Garden, etc. These building materials have their own inherent materials texture with advantages and disadvantages. No matter in ancient times or at the moment as science and technology developing rapidly, the materials should be determined according to the specific conditions of each place, including objective natural factors and subjective cultural environment.

3. The Influence of Half Pavilion on Contemporary Gardens.
When it comes to the influence of half pavilion architectures on contemporary garden designs, we should first consider the particularity of half pavilion that needs to borrow other buildings, which is the relationship between architecture and environment. The original intention of the ancient people was to make full use of what the half pavilion needed to be attached to, so as to maximize its utilization rate. The wisdom of the ancients in building a half pavilion reflects the essential relationship between human beings and the natural things in the environment at a deeper level. Generally speaking, human beings are latecomers, and the process of human construction in nature is essentially destroying the natural ecological environment. It is more of a mutually beneficial relationship with the environment. In the process of constructing the half pavilion, the ancients did not destroy the existing scenery, but fully exerted on the original scenery without destroying the it, and carried out the second design transformation, in order to express the internal driving force through the construction and arrangement of natural scenery. Relying on the individual and the environment, we can create creative works with rich connotation and touching people's hearts.

4. Conclusion.
This paper summarizes the architectural examples of the half pavilion, selects different space positions of the half pavilion in the garden, then analyzes the influence of the half pavilion on the surrounding space, and at the same time explores the application and artistic beauty of the half pavilion in the garden. It aims at advocating the public to strengthen the idea of aesthetic education, improving their own aesthetic consciousness and creating their own unique value. The artistic concept that the ancients injected into architecture in garden design should be inherited and carried forward now, so that the essence of Chinese traditional garden culture can be applied in modern environment design.

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