

Research on the Design Technique of "Small and Medium" in Beijing Red Brick Art Museum

Xiaojian Wang^{1,2}, Xiaoye Sun^{1,2,*}, Zixuan Wang^{1,2}

¹School of Architecture and Art, Hebei University of Engineering, Handan, 056038, China

²Handan Key Laboratory of Architectural Physics and Regional Architectural Protection Technology, Handan, 056038, China

Abstract

As an important part of Chinese traditional culture, private garden space design technique has its own uniqueness, making the limited area extend the infinite space. Taking the red brick art museum designed by DONGYugan as the object, this paper expounds and analyzes five new techniques: covering the ground, framing the landscape, misplacing the framed landscape, looking from the top and looking up, and thinks about how to apply them to the modern architectural design, hoping to achieve the purpose of serving the past for the present, taking its essence and inheriting the development.

Keywords

landscape space; Imaging the big from the small; Artistic expression.

1. INTRODUCTION

As a very important branch of the traditional Chinese garden architecture, the Chinese private garden has created a long-standing, extensive and profound Chinese classical garden style. Different from the imperial gardens and government gardens, the technique of "small medium see big" makes the rich merchant officials reach the artistic conception [1] of seeking interest and winning the humble China. With the continuous development of China's economic level, national pride is constantly improving, and more attention is paid to the integration of traditional cultural connotation and aesthetic aesthetics in modern garden design works. In fact, "small see big" is to blur people's sight and psychological feelings in the limited space of the garden under the condition of not changing the area of the garden, affect people's subjective feelings, make people make wrong judgment of space, feel the space is larger than the actual space, and break through the [2] space limitation. The Red Brick Art Museum is a model garden art museum designed by Professor Dong Yugan of Peking University. It generally consists of the exhibition hall, the central courtyard and the northern garden. The Red Brick Art Museum quotes the essence of Chinese traditional private garden building techniques, which is a typical representative of the modernization of traditional garden. This paper mainly analyzes the five emerging gardening techniques of "small see big", aiming to explain the application of traditional garden techniques in modern private garden architecture, explores new ideas for the application of "small see big" technique in modern architecture, and also has guiding significance for the modern translation of traditional garden space techniques.

2. INTRODUCTION TO THE RED BRICK ART MUSEUM

The Red Brick Art Museum is located in the International Art Center of No.1, Beijing, with a construction area of 6,000 square meters and three floors. The whole building takes red brick as the main architectural element, attached with part of the blue bricks, creating a garden-style

art museum with landscape consciousness. The red brick art museum is mainly divided into the art museum part and the rear green and red courtyard. The art museum is transformed from the workshop, and the art museum departments are separated and connected with [4].

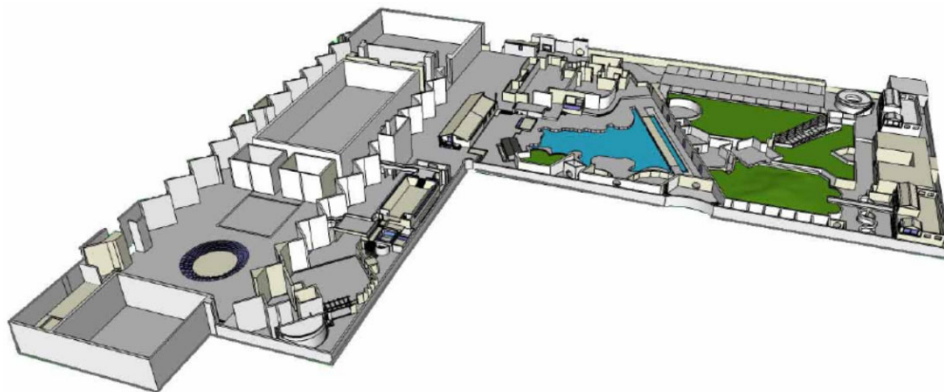


Figure 1. An aerial view of the Red brick Art Museum model

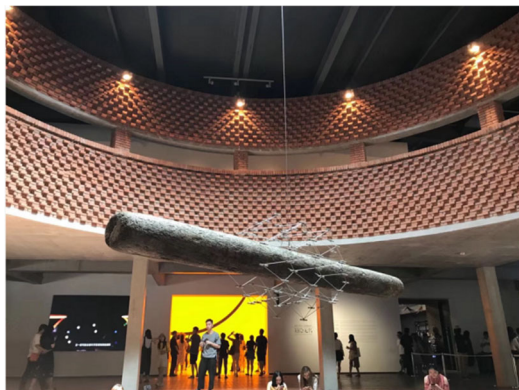


Figure 2. The occlusion space

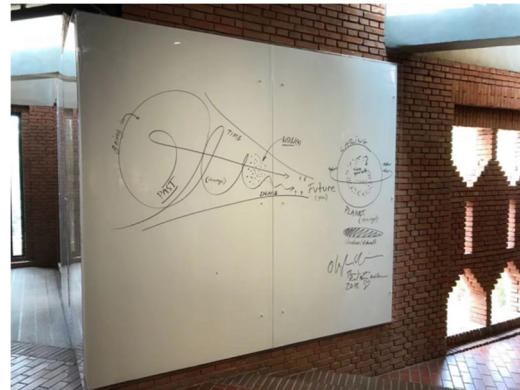


Figure 3. Frame view

3. ANALYSIS OF "SMALL SEE BIG" IN RED BRICK ART MUSEUM

3.1. Cover up the Ground

There are many forms of block in red brick art museum. According to his own field research, the author has summarized three specific research methods, namely low wall block, window frame block and hedge block [5]. Short wall block: There is a tea hall in the northern garden of the Red Brick Art Museum. People sit in the tea hall. Because the low walls with different heights are located on both sides of the tea hall, people's sight is raised by the low wall when looking at the lake. The ground between the tea xuan and the lake is completely blocked, and part of the lake between the tea xuan and the 17-hole bridge is blocked by the low wall, so there will be the illusion that the 17-hole bridge is close. The road on the water side and part of the lake are blocked, narrowing the distance between the tea xuan and the side wall of the 17-hole bridge. When you get up or walk out of the tea xuan, the actual distance is farther than the tea xuan, forming a fuzzy judgment [6] of spatial distance between sitting and standing. Standing, however, due to the height limit, tea xuan roof to line of sight, can only see three stone court and the lower half, and people sitting in tea porch can see all three stone court and cloud stone court, than before into the tea porch short memory, will form seventeen hole bridge after three stone court and cloud court is magnified short illusion, when people get up instantly and repeat the memory. The transformation of space changes from sitting to sitting. There are many examples of similar low wall occlusion in the red brick art Museum, such as low wall occlusion somewhere

in the building, rattan room low wall occlusion (see Figure 8), small arc bridge low wall, and so on [6].



Figure 4. Northeast side of Tea Xuan

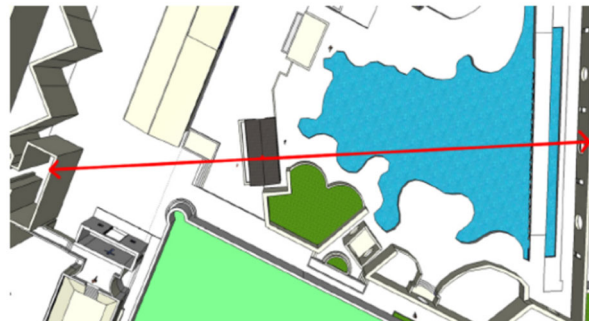


Figure 5. Relationship between tea xuan and the front and rear scenery



Figure 6. Low wall of small arc bridge

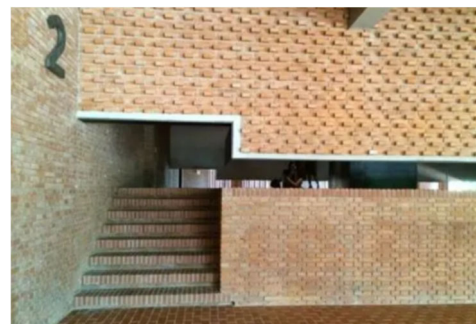


Figure 7. Low wall shelter somewhere in the building



Figure 8. The rattan room is covered by a low wall

Window frame occlusion: The mirror middle habitat in the Red brick Art Museum is a classic example of window frame occlusion. Due to the different height difference between the east and west sides of the mirror, you can only see the upper body of the pedestrian standing in the mirror standing by the lake. In addition, in the circular sandwich space of the exhibition hall of the Red brick Art Museum, the window frames on the wall are opposite, and the ground between the window frames is closed; when the person is closer, the block disappears, and the actual distance between the window frames becomes [7] away. The window frame of the small restaurant, the ground between the tea hall and the restaurant is blocked, narrowing the distance between the tea hall and the restaurant. When looking over the window frame, the ground appears and the actual distance becomes away. The same application also appears in small churches, walls and other [8].

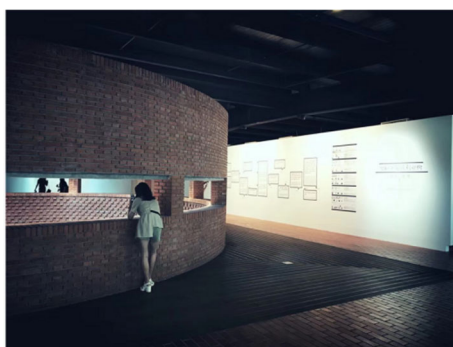


Figure 9. internal building block **Figure 10.** mirror habitat **Figure 11.** teaching wall

Hedge shelter: the following stone court is an example, when people away from the hedge, the sight across the hedge, the ground of the lower stone court is blocked, the scenery in the court is close; when people approach the hedge, the sight over the hedge, the ground of the lower stone court appears, the court scenery becomes far. When this occlusion disappears, people's judgment of distance returns to normal [9] after short-term memory. Scene frame along the hedge with a green overlap in the distance, was mistaken for a part of the hedge, because of the frame and the fence, make passers-by found the frame space is so big, and the fence distance frame also has several meters, make someone in before and after the scenery with change [10].

3.2. The Application of the Frame Scene Technique

Framed scene is one of the methods of architectural art garden construction, space scenery is not considerable, or there is a desirable scene. Using door frame, window frame, tree frame, cave, etc., selectively absorb the beautiful scenery of space, forming a landscape such as embedded in the frame. In classical Chinese gardens, the doors, Windows, holes, or trees and branches often include the beautiful landscape scenery or cultural landscapes in the distance. Framed landscape, [11] is one of the most representative gardening techniques in Chinese classical gardens. The form of frame scene is very rich. There are many ways to apply the frame scene technique in the red brick art museum, such as single frame, composite frame, horizontal frame and vertical frame. Each shape also has its own advantages, such as square, round, inverted "u" shape, fan shape, funnel type, etc. Among them, funnel type is a traditional frame form, is an innovative design. The overall frame scene can be divided into entrance frame, end frame, flow frame, mirror frame, fuzzy frame scene and other forms [12].

3.3. Mislocated frame scene

The practice of frame scene dislocation can be divided into 3 big categories. Both horizontal parallel dislocation, and vertical parallel dislocation, more Angle dislocation. When tourists visit, the misplaced frame scene limits the line of sight to a certain range, so that the space on the line of sight is pulled far-reaching, forming a non-uniform space effect. Form an infinitely expanded visual effect in limited areas.

3.4. Overlooking and up

Look up between the scenery in front of the high and low, suddenly near and far, the scenery in sight and pedestrian distance suddenly long and short. Between the pitch, the visual perception of the scenery scale or expand or shrink, the perceived space is also constantly changing between stop-and-go. This is an innovation of Feng Jizhong's square pagoda garden cutting. There are four ways to generate up and overlooking in the gallery: building elevation, ramp elevation, terrain elevation and ladder elevation. The sense of space of "small see big", borrowed, view, feel scene, should be a reflection of the sense of "not a feast, sitting poor spring valley".



Figure 12. High difference formed by ladder

Professor Dong Yugan's red brick art museum, whether in architecture, courtyard or garden, skillfully uses the above small and large garden building techniques, so that the space penetrates into each other and covers unlimited space with a limited area. More to the form of the frame technique (corner opening), the frame form (funnel), the materials used (red brick, blue brick, blue tile) innovation, which is also the innovation and development of the traditional frame form.

4. CONCLUSION

The four new techniques mentioned in this paper: blocking the ground, frame scene, frame scene dislocation, looking up and overlooking on the basis of the increase of the own building area of the garden. These four new gardening techniques have very important theoretical value and practical significance for constructing the unique spatial characteristics of new Chinese gardens. The inheritance of traditional Chinese gardens should be the inheritance of aesthetic

consciousness and spatial techniques, rather than following the external forms and symbols. The realization of modern translation reveals the possibility of incorporating traditional garden gardening techniques into the application of modern garden design, and provides the basis and reference for the inheritance of small and big. Chinese traditional garden small see big garden, is hidden in the traditional garden deep space, through case analysis and work design to explore the modern application of these techniques, to realize the traditional Chinese traditional garden translation has made a preliminary exploration, this is the response to professor Yang rui the realization of the traditional garden to modern garden transformation. It is the only way to realize the transformation from traditional gardens to modern gardens, which is also the historical responsibility of contemporary garden scholars. The development of traditional Chinese gardens needs the successor and the promoter, rather than the grave digger and the terminator. At present, the development of Chinese gardens has some disadvantages of copying western traditional gardens, lacking originality and national characteristics of Chinese civilization. Copying the foreign traditional garden form may be a shortcut, but it is inevitably a mere formality. Therefore, for the modern space techniques and ideas contained in traditional gardens, it is a valuable wealth and important enlightenment. In today's traditional gardens in a state of loss, it is necessary to jump out of the "symbolic" and "modular" imprisonment, in the case of combining with modern society, we should do "based on the modern, and the ancient for the new", and actively use the modern techniques and ideas of traditional gardens to the modern translation [15] of traditional gardens.

REFERENCES

- [1] Guo Dai-heng, Zhang Jinqiu. Architectural space of Suzhou Garden [j]. *Journal of Architecture*, 1963, (03): 19-23.
- [2] Zhu Jianning, Yang Yunfeng. The Modern Significance of Chinese Classical Garden [j]. *Chinese Gardens*, 2005, (11): 1-7.
- [3] Yang Ling, Wang Zhongde. The expansion of space and artistic conception —— in the context of Chinese classical gardens [j]. *Chinese Garden*, 2008, (04): 57-60.
- [4] Xiao Qing. Research on parking allocation of commercial buildings [d]. Beijing University of Technology, 2010.
- [5] Chen Jingjing, Tian Peng, Tian Chaoyang. The "French" overall space of Chinese traditional garden time design [j]. *Landscape Architecture*, 2015, (08): 125-129.
- [6] Liu Zhitao. Study on commercial complex based on dynamic regeneration [d]. Dalian University of Technology, 2016.
- [7] Zhou Hongjun. "Small see big" —— The space and visual characteristics of Japanese landscape gardens [j]. *Architecture and Culture*, 2016, (11): 194-196.
- [8] Liu Liuxiang, Luo Yingxin, Ren Meng, Tian Chaoyang. —— takes Professor Wang Xiangrong's works of the garden as an example [j]. *Jiangxi Agricultural Journal*, 2017,29 (05): 28-34.
- [9] Tian Chaoyang, Li Dandan, Liu Liuxiang, Sun Wenjing. Analysis of the "Small and medium see big" space technique in the red brick Art Museum [j]. *Journal of Shenyang Architecture University (Social Science edition)*, 2017,19 (03): 231-239.
- [10] Chen Jun, Liu Qixin, Jiang Bin, Yu Xiaoping, Ju Fa, Zeng Li. Research on Air Quality of Chongqing Shopping Mall [j]. *Building thermal energy ventilation and air conditioning*, 2017,36 (10): 32-37.
- [11] Liu Liuxiang, Tian Chaoyang. The traditional Chinese garden in small and medium to see large space technique analysis [j]. *Garden*, 2019, (01): 70-75.

- [12] Zhang Xiaozhu. On the design technique and cultural connotation of visually expanding space in western gardens [j]. *Urban Architecture*, 2020,17 (06): 148-149.
- [13] Hanqi Wang. How to apply the design technique of "small, see big" in classical gardens in modern architectural design [j]. *House*, 2020, (22): 117-118.
- [14] Dai baoqing. Analysis on the problems of modern urban landscaping and new ideas [j]. *Modern Gardening*, 2021,44 (06): 145-146.
- [15] Zhang Zongxin. Exploring the Development Trend of Modern Landscape Architecture Design [j]. *Real Estate World*, 2021, (06): 131-133.