

# Application of Horticultural Therapy in the Design of Health-Preserving Landscape Spaces: A Case Study of Zhaoqing Yanyang Lake Park

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**Abstract:** Under the influence of the concept of ecologically livable cities, urban parks, as important green infrastructure, have attracted increasing attention for their health-preserving functions. Taking Zhaoqing Yanyang Lake Park as the research object, this paper analyzes the existing landscape elements and problems of the park, evaluates its health-preserving potential, puts forward the key points of health-preserving landscape construction from the perspective of ecological livability, explores the application path of horticultural therapy in the design of health-preserving landscape spaces, and proposes corresponding optimized design schemes, so as to provide reference for the reconstruction and construction of similar parks.

**Keywords:** Horticultural Therapy; Health-Preserving Landscape; Ecological Design

## 1. Introduction

With the rapid development of modern cities, people are under increasing pressure from work, life and other aspects. In response, they pay more and more attention to using natural ecological sites for health preservation and relaxation. At this stage, in addition to meeting the basic needs of rest and play, urban parks can also meet people's needs for physical and mental health to a certain extent, focusing on people's physical and mental well-being. Among them, Zhaoqing Yanyang Lake Park is an urban park with healing functions. In this park, horticultural landscapes can be arranged according to local characteristics, and horticultural facilities can be used for decoration, providing an ideal practice site for the application of horticultural therapy in the design of health-preserving landscape spaces.

## 2. Theoretical Basis of Health-Preserving Landscape and Horticultural Therapy

### 2.1 Core Connotation of Health-Preserving Landscape

Health-preserving landscape is a type of landscape that uses landscape elements and plans the landscape environment to create an atmosphere of stress reduction.<sup>[1]</sup> recovery and pleasant enjoyment. It has obvious health-preserving functionality, emphasizing the use of natural elements such as green plants and water bodies to achieve sensory stimulation through vision, hearing, smell, taste, touch and other ways, focusing on the user's experience in the garden landscape space, promoting people to deeply integrate into nature, and striving to maximize the value of ecological services. This type of landscape design will pay more attention to the positive effects of the landscape on people's physical and mental health, and carry out design around the optimization of health-preserving functions, so that people can obtain a good health-preserving experience.<sup>[2]</sup>

### 2.2 Multidimensional Value of Horticultural Therapy

In modern health-preserving landscape design, horticultural therapy plays a pivotal role. Through high-frequency contact with horticultural plants in horticultural activities such as picking, planting, garden maintenance and horticultural processing, users exercise their physical functions in hands-on horticultural activities, improve their physical quality, and can increase their immunity to a certain extent, while also experiencing immersive emotions.<sup>[3]</sup> The concentration of horticultural activities itself is a kind of spiritual healing effect. When carrying out a specific horticultural activity, people will have a unique feeling in the activity, which can effectively alleviate the adverse

effects of negative emotions and improve the current psychological state. In terms of social value, users can have the opportunity to find the same topics through participating in horticultural activities, and use the same topics as an opportunity to enhance mutual connection, increase a sense of belonging, and help create a harmonious and pleasant atmosphere.<sup>[4]</sup>

### **2.3 Coupling Relationship between Health-Preserving Landscape and Horticultural Therapy**

Affected by the global concept of healthy cities, people attach great importance to the ecologically livable environment of cities. Under this ideological concept, health-preserving landscape and horticultural therapy are integrated, promoting each other and complementing each other to act on users, which can bring good physical and mental rehabilitation effects to users. In the design of health-preserving landscape environment, the design concept of horticultural therapy can be used to promote the natural environment to play a better healing role. With natural healing as the goal, on the basis of scientific planning of plant layout, activity space, interactive facilities, etc., the health-preserving function of the landscape is strengthened, and the user's sense of participation and experience are enhanced.<sup>[5]</sup> This coupling relationship emphasizes the equal emphasis on nature and humanity, and specifically meets the special needs of users. Therefore, horticultural therapy can not only enrich the content of health-preserving landscape, but also make health-preserving landscape better serve people and promote the harmonious coexistence between man and nature.

## **3. Application Potential of Horticultural Therapy in the Health-Preserving Landscape of Yanyang Lake Park**

### **3.1 Analysis of Existing Problems in Yanyang Lake Park**

Analyzing from the existing landscape elements, Yanyang Lake Park has its own advantages, but there are still many areas that need to be improved and perfected. The existing horticultural activity venues are unreasonably distributed, some horticultural venues have low utilization rates, and the combination with regional cultural factors is not close enough; the

trails, rest areas and various auxiliary facilities in the barrier-free design need to be optimized according to the actual use of the elderly, people with physical discomfort and other groups. The types of green plants and flowers in some areas are relatively single, the seasonal changes are not obvious, there are deficiencies in five-sense stimulation, and there are certain ecological defects; the water body maintenance of some lake areas and surrounding rivers is not timely, failing to provide a good environment for people's health preservation.

### **3.2 Evaluation of Health-Preserving Potential of Yanyang Lake Park**

Yanyang Lake Park has excellent natural conditions, with dense vegetation and a vast lake, forming a livable microclimate environment, allowing people to breathe fresh air while playing. On the shore near the lake, there are relatively introverted lawn areas and under-forest spaces with appropriate scales for tourists to rest. The park has a variety of spatial scales to choose from. People can meditate quietly or interact with playmates here. There are suitable activity areas for different age groups, and different groups of people can find suitable health-preserving methods. The walking paths set up in the park are convenient for people to carry out low-intensity activities such as walking and jogging, which is conducive to improving people's physical and mental health. These advantages prove that Yanyang Lake Park has significant health-preserving potential from multiple perspectives, providing a strong basis for the subsequent landscape optimization design.

## **4. Optimized Design of the Rehabilitation Landscape of Yanyang Lake Park from the Perspective of Horticultural Therapy**

### **4.1 Strengthen the Design of Five-Sense Experience**

From the perspective of horticultural therapy, it is very necessary to use people's five senses in the landscape design process. Among them, vision, hearing, smell, taste and touch are the basis of human perception. When selecting landscape design elements, attention should be paid to creating a multi-level sensory experience. We should be good at using the colors, tastes and textures of natural elements to stimulate the user's perception, and at the same

time make it easier for users to integrate into the landscape through this means, generate a certain sense of connection during the experience, and thus exert the function of natural healing to relieve the user's tension and anxiety, relax the mood, and thus achieve a certain health-preserving effect.<sup>[6]</sup>

Viewing colors is to appreciate the most intuitive appearance, and colors have the strongest visual impact among natural elements.<sup>[7]</sup> Plant communities in different seasons present different hue structures. Different color combinations are used to form continuous spatial sequence changes with distinct seasons, giving people a comfortable visual enjoyment.<sup>[8]</sup> In plant configuration, flower-viewing tree species should be selected in spring to create colorful belts, heat-resistant green plants can be configured around pavilions in summer, leaf-viewing tree species can be set in autumn to create a continuous canopy line, and cold-resistant arbor trees can be used in winter to show forest landscapes. At the same time, by comparing leaves of different thicknesses, the line beauty of plants is fully reflected, thereby guiding the line of sight and deepening the layers.

In terms of olfactory perception, aromatic green plants such as lavender or rosemary can be planted around the meditation area to achieve a calming and soothing effect. Fresh-smelling varieties such as mint and lemon verbena can be arranged beside the health-preserving trails, so that tourists can naturally touch the leaves of the plants and breathe the fragrance when walking; at the same time, some traditional fragrant flowers such as sweet osmanthus and jasmine can be used to decorate several olfactory memory points in the cultural and leisure area.

Tactile design emphasizes the texture change of materials. The horticultural activity area can be equipped with interactive devices of different textures. The bark display wall can let people feel the outer skin texture of different types of trees. The moss landscape area can bring users a soft and moist comfortable touch. Pebble massage trails can be added to promote blood circulation of users through plantar stimulation; the rest facilities are all made of natural materials. Bamboo seats bring a cool touch, stone tables convey a thick texture, and wooden platforms give people a comfortable and warm feeling.

The creation of the auditory environment includes two ways: natural soundscape and artificial intervention.<sup>[9]</sup> The original ecological sounds such as frog calls and bird songs are retained around the lake, and devices such as wind chimes and dripping water are arranged along the trails to generate artificial sound sources. In the park, the site can be divided into functional areas such as meditation area and activity area according to the terrain height and vegetation enclosure, so that the sounds of the two functional areas do not interfere with each other.

The taste experience can be carried out in the form of an edible botanical garden. The botanical garden is divided into three parts: herb area, fruit and vegetable area, and tea area. Popular science signs are set up to explain the plant characteristics and eating methods, and picking activities are held regularly, allowing tourists to cook fresh ingredients into delicious food by themselves after picking, and gain a sense of accomplishment; Duan inkstone culture can also be integrated into characteristic catering, and special snacks such as rice cakes can be made using inkstone-shaped molds, converting cultural symbols into taste memories.

## **4.2 Construct a Health-Preserving Spatial Sequence**

An open square is built near the entrance of Yanyang Lake Park as a gathering and distributing area, which is the first viewing point for people to enter the park. The surrounding colorful flowers are used to decorate and create a viewing green belt. As soon as people enter the park here, they can immediately attract their attention and feel comfortable and pleasant physically and mentally. When moving from the outside to the depths of the park via the main garden road, dynamic areas and static areas are gradually arranged in a progressive manner. Soft dividing lines are set with plant hedges 3 to 5 meters wide. The hedges are planted with shrubs with a large number of leaves and obvious changes in all seasons, including azaleas or pittosporum, so as to achieve relative independence of the dynamic and static areas without causing visual obstruction.

By distinguishing the functional attributes of the areas, this space can be arranged with places suitable for moderate physical activities, and spaces for people to rest quietly can also be set

up; dynamic places can be appropriately equipped with sports equipment or reserved with sufficient open lawns; static places can be enclosed and divided by some plants, water, mountains, slopes, etc., without affecting the use of other places by people in a larger surrounding area. An effective functional area connection path is set between the dynamic area and the static area, allowing users to switch to the corresponding health-preserving space in a comfortable state according to their own needs, so as to achieve better health-preserving effects. Specifically, a dynamic activity area is set on the side close to the lake, equipped with fitness equipment such as rope exercise, sit-up, stretching and strength training, which are suitable for people of all ages. Elastic plastic floors are used around the rope exercise equipment, and wooden steps are added to ensure the safety of equipment use. In addition, an open lawn with an area of about 500 to 1000 square meters is set as an activity venue. Collective sports such as yoga and tai chi can be carried out on the surrounding open spaces, allowing people to entertain through sports in this area.

The static rest area includes three parts: meditation corner, reading pavilion and viewing platform. The meditation corner is located in the place with the most lush plants and the least interference in the park. The terrain is used to set height differences to make the site a relatively independent space. The interior is paved with wooden floors and planted with herbs such as lavender and sage. The reading pavilion is mainly made of wooden structure, simple and elegant, with bookshelves inside, equipped with wooden benches and reading lights, and placed with health-preserving cultural books for tourists to read. The viewing platform is set at the highest point of the lake or a place with a wide view, made of anti-corrosion wooden floors, with stone guardrails around it. The stone guardrails are carved with Duan inkstone cultural patterns. People can overlook the lake scenery here and feel the integration of natural and humanistic atmosphere.

The design of the path system needs to emphasize accessibility and guidance. <sup>[10]</sup>The width of the main tourist route is controlled at 2.5 to 3 meters, the road surface is paved with non-slip permeable bricks, and the color of the road surface is coordinated with the

surrounding environment. The width of the branch road is controlled at 1.5 to 2 meters, paved with gravel or pebbles, which can achieve a good plantar massage effect when walking. Direction signs and scenic spot introduction signs are set along the path. The signs are made of wooden materials, matching the surrounding environment. In addition to the introduction of scenic spots in the scenic area, the content of the introduction signs can also integrate some knowledge about Duan inkstone, allowing people to receive cultural edification imperceptibly. Through such a spatial sequence construction, the health-preserving function of Yanyang Lake Park will be comprehensively improved, providing tourists with a richer and higher-quality health-preserving experience.

### **4.3 Integrate Therapeutic Elements of Regional Culture**

First of all, extract local traditional colors, materials and symbols and apply them to landscape sketches, ground pavement or identification systems, so as to improve the cultural recognition of the site space and provide users with a sense of inner identity; secondly, integrate the linear beauty and natural texture in Duan inkstone production into hard landscapes with gentle and smooth curves to form a warm artistic healing place; finally, set up thematic interactive devices or display nodes related to regional historical and cultural stories, provide cultural and artistic nourishment at the sensory level of the viewers' vision and hearing, and let the viewers feel the cultural power of local spirit invisibly without affecting daily use. A deeper cultural connection is also an important factor to strengthen the healing of the health-preserving space.

In the design practice, the shape of Duan inkstone can be integrated into the design of rest facilities. The back of the seat can be made into the arc of Duan inkstone, and simplified Duan inkstone patterns can be carved on the surface, which not only has the visual beauty of Duan inkstone shape, but also adds ergonomic effects; local unique bluestone of Zhaoqing and waste materials of Duan inkstone can also be selected to create Duan inkstone carving patterns as part of the ground pavement. The black color of Duan inkstone is used as the base, combined with golden characters as the unified color matching mode of the stylized logo of Duan inkstone, which is used as the unique

language symbol of the identification system. Interactive device experiential nodes are designed and developed according to the production process of Duan inkstone, including setting a tactile wall simulating stone mining, presenting the texture of inkstone mining with materials of different roughness; setting a carving experience area, placing micro Duan inkstone blanks and safe carving tools suitable for children, and carrying out simple pattern carving under the guidance of professionals; setting an ink wash experience space, using washable materials as alternative inkstones to carry out ink grinding activities, and using projectors to present the smudging effect of ink color. Through hands-on practice, these devices effectively extend the stay time of tourists and deepen their cultural cognition.

The design of landscape sketches can draw on the concept of combining natural craftsmanship and human ingenuity of Duan inkstone, organically integrating natural elements with artificial techniques. A viewing platform imitating the style of Duan inkstone is arranged by the lake. The edge of the viewing platform is streamlined and curved, concave inward to form the arc effect of the inkstone. Local pebbles are inlaid on the platform surface, which look like inkstone stones, with a unique flavor; an inkstone field themed sculpture is arranged at the path node, using metal materials to shape an abstract inkstone plowing scene, combined with lighting, presenting a wonderful light and shadow effect as a whole.

## 5. Conclusion

Taking Zhaoqing Yanyang Lake Park as an example, this paper explores the application path of urban park health-preserving landscape design based on the theoretical framework of horticultural therapy. Through systematic analysis of natural background and humanistic resources, it constructs a health-preserving landscape system based on natural healing and focusing on multi-sensory experience, making the health-preserving space of Yanyang Lake Park get rid of the limitation of a single perspective and establish a multi-dimensional healing system including visual healing, tactile healing, auditory healing and olfactory healing. In addition, this culture-empowering design method can enhance the recognition of the space, and realize the spiritual comfort of tourists through their cultural identity, thus

improving the health-preserving landscape both in form and spirit.

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