

Optimization Design Strategies for the Therapeutic Landscape of Zhaoqing Yanyang Lake Park

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Abstract: Starting from the current social context of an aging population and excessive mental stress among contemporary people, this study conducts research on the optimized design of the therapeutic landscape at Zhaoqing Yanyang Lake Park. It explores aspects including the improvement of spatial layout, the concept of five-sense design, the optimized configuration of plants, and the integration of regional culture, aiming to enhance the park's landscape quality and therapeutic functions, thereby contributing to the building of a society characterized by physical and mental health as well as harmony.

Keywords: Yanyang Lake; Therapeutic Landscape; Five-Sense Design

1. Introduction

The series of negative impacts caused by issues such as work stress, environmental pollution, and social alienation have led to an increased demand for urban therapeutic landscapes. Through the rational and humanized design of spatial layout and landscape facilities, places that relax the body and mind, relieve stress, and promote recovery are provided. Zhaoqing is endowed with unique landscape resources (mountains and waters). Reasonable spatial planning of therapeutic landscapes and abundant social spaces can not only encourage residents to engage in outdoor activities, enhance spatial interaction and interpersonal communication, but also help improve urban biodiversity, alleviate residents' mental stress, reduce feelings of loneliness and depression, and promote the development of physical and mental health.

2. Related Theoretical Foundations

2.1 Concept and Theory of Therapeutic Landscape

A therapeutic landscape is a type of landscape that applies interdisciplinary theories from psychology, medicine, landscape architecture, and other fields. By scientifically designing environmental spaces, it promotes the physical and mental recovery of users. Centered on users, therapeutic landscapes organically integrate nature and humanity to enhance residents' rehabilitation experience. They can effectively guide residents to engage in visits and exercise, exerting a positive and healthy influence on their psychology. The comfortable environment allows residents to relax in social spaces, facilitating interpersonal communication and alleviating loneliness. Therapeutic landscapes have a positive impact on both the physical and mental health of residents: they help relieve negative emotions such as stress, anxiety, and depression, and enhance psychological resilience. As therapeutic landscapes continue to develop and improve, a series of important theories have been formed. Among them, landscape therapy refers to a therapeutic method that uses natural and man-made landscapes. Through approaches like viewing and participation, it adjusts people's physical and mental states to achieve the goals of treatment and rehabilitation [1]. Natural elements in the landscape, such as green plants, water bodies, and sunlight, can stimulate the human nervous system, helping to relieve pain, improve mood, and enhance a sense of pleasure. The spatial layout and design of the landscape can create a comfortable, tranquil, and safe environmental atmosphere. Additionally, landscape therapy can provide social and activity spaces, encouraging people to actively participate in social activities and moderate physical exercise. This enhances their interpersonal skills and promotes the recovery and improvement of physical functions [2].

2.2 Principle of Five Senses Design

Five Senses Design centers on human perception,

focusing on the experiences of the five senses—sight, hearing, smell, taste, and touch. When the concept of Five Senses Design is fully integrated into therapeutic landscape design and combined with various elements in the surrounding environment, it can provide users with a higher-quality and more comfortable rehabilitation environment, thereby enhancing the rehabilitation effect.

Sight holds a crucial position in Five Senses Design, and visual elements such as color, shape, line, and light and shadow play a key role in landscape design. Colors convey different emotional perceptions and trigger distinctly opposite psychological responses. In therapeutic landscapes, the rational use of colors can regulate users' emotions and mental states—for instance, soft color tones are used in rest areas to create a relaxing atmosphere, while bright and lively colors are adopted in activity areas to stimulate users' vitality and enthusiasm. By skillfully utilizing the shapes and lines of landscape elements like plants, buildings, and sculptures, the line of sight can be guided, focal points and a sense of hierarchy can be created, and the visual experience can be enriched.

Consideration should also be given to the contrast and harmony of colors, avoiding excessively cluttered or harsh color schemes. In terms of plant configuration, plants of different colors can be reasonably matched. For example, yellow winter jasmine and purple lilac can be planted adjacent to each other to create a striking contrast, enhancing the visual layering and interest. Alternatively, plants with similar colors can be grouped together—such as pairing pink peach blossoms with pale purple cherry blossoms—to create a soft and harmonious aesthetic. Through clever color matching, not only can the visual needs of visitors be met, but it can also have a positive impact on their psychological and physical states, promoting the therapeutic effect.

The creation of auditory experiences includes natural sounds such as bird chirps, flowing water, and the rustle of wind. When music is integrated into the natural environment to foster specific atmospheres and moods, it not only adds vividness and vitality to the landscape but also exerts a positive impact on people's mental health. Natural sounds can lower the level of stress hormones in the human body, alleviate feelings of anxiety and tension, and improve sleep quality.

Smell is a sense that is easily overlooked in landscape design yet can deliver unique experiences. The distinctive scents of plants or the surrounding environment can add rich layers to the landscape. In therapeutic landscapes, the rational arrangement of aromatic plants stimulates the sense of smell, which in turn regulates users' physical and mental states and promotes their physical and mental health.

Textures, temperature, and humidity can all be perceived through the sense of touch. By selecting materials with different textures—such as stone, wood, and metal—a rich tactile experience can be created. The use of materials with varied textures can meet users' tactile needs and enhance their interaction with and connection to the environment.

Taste experiences can also be combined with other sensory experiences to create a richer and more unique landscape experience. Tasting local specialty foods while admiring the beautiful surrounding scenery, listening to natural sounds, and feeling the gentle breeze brushing against the skin allows people to be fully immersed in the pleasant environment.

3. Optimization Design Strategies for the Therapeutic Landscape of Zhaoqing Yanyang Lake Park

3.1 Overall Design Idea

Make full use of the existing natural landscape resources of the park and divide it into different functional areas based on the rehabilitation needs of different groups of people. These areas are not only relatively independent but also organically connected, forming a complete therapeutic landscape system. A rehabilitation and recuperation area is set up in a relatively quiet and beautiful part of the park, where rehabilitation trails with massage functions are paved, using ground pavements of different materials such as cobblestones and rubber. Handrails and resting seats are installed on both sides of the trails to facilitate the use of people with mobility impairments. Meanwhile, plants with rehabilitation effects—such as ginkgo and *Eucommia ulmoides*—are planted around the trails. The scents emitted by the leaves and fruits of these plants, as well as the beneficial substances they release, help improve respiratory function, lower blood pressure, and relieve physical fatigue[3].

In the design process, emphasis is placed on the

integration of nature and humanity, with Zhaoqing's Duan Inkstone Culture incorporated into the landscape design. The unique charm of Duan Inkstone Culture is showcased through landscape ornaments, architectural styles, cultural exhibitions, and other means, allowing visitors to appreciate the beautiful scenery while being immersed in the local culture. Modern landscape design techniques are applied to rationally arrange landscape elements such as plants, water bodies, and ornaments, creating a comfortable, pleasant landscape environment with therapeutic functions. The participation and interaction of visitors are emphasized: by setting up various experience facilities and activity programs—such as edible plant picking, music interactive installations, and tactile experience trails—visitors can fully engage in the landscape experience, enhance their five-sense experience, and promote physical and mental health[4].

Various flowers and herbs such as lavender, rosemary, and honeysuckle are planted in the park. The appearance and scent of these plants can soothe the nerves, relieve stress, and achieve other such effects. A horticultural therapy area is set up in the park, equipped with essential horticultural facilities including planting troughs and tool racks. Regular public horticultural activities are held here, allowing residents to engage in tasks like sowing, watering, and fertilizing [5]. These activities not only exercise hand muscles and improve physical coordination but also bring residents psychological satisfaction and joy. A dedicated area is designated as a meditation zone, surrounded by plants like bamboo to create a quiet and serene atmosphere. People in need of rehabilitation can practice meditation, yoga, and other activities here to alleviate anxiety and stress, as well as enhance psychological resilience. Near the pavilions, there are gurgling streams or small tranquil water features. The sound of flowing water helps users better enter a meditative state, achieving deep physical and mental relaxation.

3.2 Integration of Five Senses Design

Four sections along the main circular road around Yanyang Lake are planted with plants of different seasons and forms, creating a plant landscape with scenic views all year round. Peonies can be planted in spring; bougainvillea and hibiscus in summer—given the large variety of summer flowers, lotus, as the core element of water features, can also be planted intensively in

designated areas. In autumn, chrysanthemums are planted together with osmanthus; in winter, phalaenopsis and periwinkles bring vitality to Guangdong's winter days. Zhaoqing has a relatively warm climate throughout the year, which is suitable for vegetation growth, and there will be no leaf fall phenomenon seen in northern regions. Flower areas corresponding to different seasons surround the entire Yanyang Lake, serving as distinctive seasonal landscapes. Corresponding landscape ornaments and sculptures are installed in the four sections to enhance the visual interest and appeal [6].

Tall and dense arbors and shrubs are planted around the park to form a green sound insulation barrier that blocks urban noise. Inside the park, landscape elements are rationally arranged to separate noise sources from rest areas and activity areas, reducing noise interference to visitors. More trees and flowers that birds prefer for habitat—such as camphor trees, osmanthus trees, and cherry blossom trees—are planted to provide food and shelter for birds. This not only beautifies the environment but also increases the number and variety of birds. Near water areas like the lake and wetlands, aquatic plants such as reeds and calamus are planted to provide a suitable living environment for waterfowl and enhance the natural atmosphere [7]. Tall trees are planted to provide shade in summer; meanwhile, the sound of wind rustling through the leaves, combined with the sound of flowing water, is clear and pleasant, bringing a sense of tranquility and relaxation to visitors. Music installations are set up, where soft music blends with natural sounds to help residents relieve stress and relax both physically and mentally.

In rest areas, plants with soothing and tranquil scents such as lavender and chamomile are chosen; in activity areas, plants with fresh and invigorating scents like mint and lemongrass are selected; and in children's play areas, plants with sweet and rich scents that bring joy—such as osmanthus or cherry blossoms—are used. Aromatic pavilions are set up in the park, where specimens of various aromatic plants and informational display boards are placed to help residents learn about the scent characteristics and effects of the plants. Additionally, hands-on experience activities like sachet making can be offered, allowing residents to make sachets by themselves and take the fragrance home.

3.3 Cultural and Leisure Area

A cultural corridor is set up to showcase contents such as Zhaoqing's historical culture and folk customs. Display boards or murals are installed on the walls of the corridor to present Zhaoqing's historical figures, traditional festivals, folk arts, and more. Additionally, several cultural activity zones can be arranged in the corridor, such as a calligraphy and painting exhibition area and an opera performance area, where regular cultural activities are held. For example, craftsmen specializing in Duan inkstone making can be invited to demonstrate the production process on-site, allowing tourists to participate in the making of Duan inkstones themselves and experience the charm of traditional craftsmanship. Locally distinctive plants such as banyan trees and kapok trees are selected for planting here.

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Plants with rehabilitation effects such as ginkgo, *Eucommia ulmoides*, and camphor trees are selected. Ginkgo leaves have the functions of dilating blood vessels, improving blood circulation, and resisting oxidation, which help prevent and treat cardiovascular diseases. The bark of *Eucommia ulmoides* has effects such as lowering blood pressure, strengthening muscles and bones, and preventing miscarriage. The scent emitted by camphor trees can refresh the mind, repel insects, and kill bacteria, which is beneficial to human health. These plants can not only provide a healthy environment for people in need of rehabilitation but also bring people visual enjoyment through their shapes and colors. Rehabilitation and fitness facilities include intelligent fitness equipment, barrier-free fitness trails, and more. The intelligent fitness

equipment is equipped with electronic displays, which can show real-time sports data and provide personalized exercise recommendations based on the user's physical condition and fitness goals. Barrier-free fitness trails need to be non-slip, flat, and moderately wide to facilitate the passage of wheelchairs and people with mobility impairments. Handrails and resting seats are installed around the trails, and a fitness node is set up at intervals, equipped with fitness equipment suitable for people of different groups to meet the fitness needs of those in rehabilitation [9].

3.4 Water Body Design

Streams and fountains are installed, where the fountains simulate the form of natural streams. Water flows down from a higher place, creating layers of splashes and making a clear and pleasant sound. Stones and wooden plank roads are set up beside the streams; visitors can walk along the plank roads, listen to the sound of flowing water up close, and feel the vitality of the water. Some ornamental fish, such as goldfish and koi, are raised in the streams to add interest. Aromatic plant essential oils are added to the fountains—when the fountains spray water, the fragrance diffuses in the air along with the water mist, enhancing the olfactory experience and improving the landscape quality and attractiveness of the park.

The lake surface and streams of Yanyang Lake Park are utilized to design water-accessible platforms, fountains, and other facilities. The water-accessible platforms are constructed using wood or stone materials, with their height kept close to the water surface to allow visitors to get in close contact with the water. Protective railings are installed around the platforms to ensure visitors' safety. Seats and sunshades are placed on the water-accessible platforms, where visitors can sit and enjoy the lake view. Aquatic plants such as lotus flowers, water lilies, and calamus are planted around the platforms—this not only beautifies the water environment but also attracts fish and birds, enhancing the ecological atmosphere [10].

4. Conclusions

Taking Zhaoqing Yanyang Lake Park as the research object, this study integrates the concept of Five Senses Design to conduct an in-depth exploration of the design of therapeutic landscapes in urban parks. It proposes the

following strategies: improving the spatial layout of the park's therapeutic landscape, rationally dividing different functional areas; optimizing plant configuration by selecting plants with rehabilitation effects to create a distinctive plant landscape with scenic views across all seasons; integrating the concept of Five Senses Design to enhance visitors' sense of experience and participation, thereby promoting their physical and mental health; and combining the local historical culture and regional characteristics to create a culturally distinctive landscape that inherits and promotes local culture.

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