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# Means of landscape design in the organization "pocket-park" (on the example of China)

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# Contents

INTRODUCTION ..... 8

Chapter 1 Research Status of the Project ..... 13

1.1 Literature review related to the research topic ..... 13

1.2 Analysis of the problems faced by citizens when using pocket parks based on modern empirical research ..... 16

1.2.1 Improper spatial layout and accessibility barriers ..... 17

1.2.2 Insufficient response to single function and diversified demands ..... 18

1.2.3 Poor ecological quality and monotonous plant configuration ..... 18

1.2.4 Lack of Service Facilities and Lack of Maintenance Management ..... 19

1.2.5 Lack of cultural characteristics and weak regional identity ..... 20

1.2.6 Lack of public participation mechanism and insufficient cultivation of community cohesion ..... 21

1.3 Research Methods ..... 22

Conclusion of Chapter One ..... 22

Chapter 2: Pocket Park Organizational Landscape Design Method Taking China as an Example ..... 25

2.1 Core Principles of Pocket Park Landscape Design ..... 25

2.1.1 Functional principle ..... 25

2.1.2 Ecological principle ..... 26

2.1.3 Humanistic principle ..... 28

2.1.4 Accessibility principle ..... 29

2.2 Spatial Organization Strategy of Pocket Park ..... 31

2.2.1 Space partitioning ..... 31
2.2.2 Vertical design ..... 34
2.3 Design Methods for Landscape Elements of Pocket Park ..... 36
2.3.1 Hard Landscape Matching ..... 36
2.3.2 Plant Landscape Configuration ..... 38
2.3.3 Water Landscape ..... 41
2.4 Cultural Empowerment Design Methods for Pocket Parks ..... 41
2.4.1 Historical and cultural implantation ..... 42
2.4.2 Integration of Folk Activities ..... 44
2.4.3 Art intervention in design ..... 46
Conclusion of Chapter 2 ..... 47
Chapter 3 Landscape Design Proposal for Pocket Park in Changzhou, China ..... 49
3.1 Design Concept ..... 49
3.2 Functional zoning of pocket park landscape design scheme ..... 50
3.2.1 Entrance Square Area ..... 50
3.2.2 Cultural Center Square Area ..... 51
3.2.3 Children's Play Area ..... 51
3.2.4 Social Rest Area ..... 51
3.2.5 Fitness Activity Area ..... 52
3.2.6 Cultural Exhibition Area ..... 52
3.3 Artistic Image Design of Functional Areas ..... 52
3.4 Decorative Materials Used in Landscape Design ..... 53
3.5 Plants used in landscape design ..... 54
3.5.1 Tree layer ..... 55

3.5.2 Shrubs layer ..... 55

3.5.3 Ground cover layer ..... 56

3.6 Lighting Design ..... 56

Conclusion of Chapter 3 ..... 57

Conclusion ..... 59

References ..... 62

APPENDIX A. Visual material for the text ..... 64

APPENDIX B. Tables, diagrams ..... 81

APPENDIX C. Project proposal ..... 87

# ABSTRACT

**Є Мінь.“Means of landscape design in the organization ‘pocket-park’ (on the example of China)”**

This thesis focuses on the practical issue of landscape design of pocket parks in small and medium-sized cities in China, which directly affects the efficiency of urban stock space utilization and the quality of life of citizens. It deeply explores the organization and landscape design methods of high-quality pocket parks. The analysis of relevant literature on the research topic shows that there have been studies on the design dimensions of pocket parks, but there is a lack of a comprehensive design system that adapts to the regional characteristics of small and medium-sized cities in China and takes into account diverse needs.

**The research object** is the landscape design of Pocket Park.

The research focuses on the landscape design method of pocket park organization using China as an example.

The paper structure includes an introduction, three main chapters, conclusion, references, and appendix.

**The introduction section** clarifies the practical significance of the research, elaborates on the research objectives and tasks, defines the research object and content, the research methods adopted, the academic innovation of the research, delineates the time and geographical scope of the research, as well as the theoretical and practical value of the research.

**The first chapter** systematically reviewed relevant literature and modern empirical research on pocket parks both domestically and internationally. These studies revealed the core issues of pocket parks in terms of spatial layout, functional

configuration, and ecological quality from the perspectives of different user groups, and based on this, determined the core elements and research directions of pocket park landscape design. By comprehensively analyzing these research results, the current research foundation and shortcomings in the field have been clarified, providing a practical basis for the subsequent design system construction.

**Chapter 2** extracts the four core principles of pocket park landscape design, including functionality, ecology, humanity, and accessibility principles. We have developed a spatial zoning strategy of "separation of movement and stillness+functional aggregation" and a vertical design strategy of "terrain utilization+three-dimensional expansion", forming a refined design method for three major elements: hard landscape, plant landscape, and water landscape. We have also proposed a cultural empowerment path of historical and cultural implantation, integration of folk activities, and artistic intervention in design, and constructed a systematic design method system.

**Chapter 3**, based on the previous research results and combined with the regional cultural characteristics and actual site conditions of Changzhou City, constructs the design concept of "Green Vein Integration City, Cultural Charm Residence". It elaborates on the planning and design of six functional areas, including the entrance square area, cultural center square area, and children's game area, as well as the artistic image design of decorative materials, and the use of plants and lighting schemes in site design.

The **conclusion** section points out that the contradiction between the scarcity of urban land resources and the growth of diverse demands from citizens determines the necessity of optimizing the spatial value of pocket parks through scientific landscape

design, while taking into account functional, ecological, cultural, and population friendly needs. Through a systematic review of research results and practical experience, the core principles and methodological system of pocket park landscape design have been determined, and general recommendations for pocket park design in small and medium-sized cities have been proposed. Based on the research results, specific design suggestions for Pocket Park in Changzhou City have been provided.

**Keywords:** Pocket Park; Landscape design; Use for all ages; Regional culture; Ecology; functionality

# INTRODUCTION

## 1、 Research background

In recent years, with the advancement of urbanization in China, incremental land resources have become increasingly scarce. In this context, it is difficult to continue building large-scale parks in cities. Under the guidance of national policies, the urban development model has begun to shift from "incremental" development to "stock" development, and pocket parks have emerged.

In December 2021, the General Office of the Ministry of Housing and Urban Rural Development explicitly proposed to strengthen the planning of urban green space systems, encourage the construction of micro green spaces and pocket parks, and increase urban green space coverage and per capita park green area. In July 2022, the Ministry of Housing and Urban Rural Development and the National Development and Reform Commission issued the "14th Five Year Plan for National Urban Infrastructure Construction", which combines the construction of a 15 minute living circle, uses fragmented open spaces in the city to create green spaces, and builds various street parks, pocket parks, and small and micro green spaces according to local conditions to promote neighborhood communication and enhance community cohesion. On June 17, 2024, the General Office of the Ministry of Housing and Urban Rural Development officially released the "Pocket Park Construction Guidelines (Trial)", which aims to scientifically promote the construction of pocket parks, improve supporting service functions, and enhance maintenance and management levels. It is applicable to the planning, design, construction, and management of pocket parks within cities, and proposes corresponding principles and requirements. The development of "stock type" mainly emphasizes the renewal of

existing land and spatial structure in the city to achieve urban development without adding new construction land. At present, urban land resources are scarce, and people are beginning to shift the direction of urban green space construction towards pocket parks.

In recent years, as a typical area in the process of urbanization, the Zhonglou District of Changzhou has seen a rapid development in its urban landscape, and the construction of pocket parks has also shown a thriving trend. However, while developing rapidly, a series of problems have also been exposed. For example, the design of some pocket parks lacks scientific planning and the spatial layout is unreasonable, resulting in low utilization efficiency; Single plant configuration and lack of ecological diversity; Unreasonable design of road flow lines, affecting tourist experience; The functional positioning of the venue is unclear, making it difficult to meet diverse needs; The lack of facilities and low public participation limit the social benefits of Pocket Park. On the other hand, with the improvement of residents' living standards, users' demands for pocket parks have become more diverse and personalized. Residents of different ages, genders, and occupations have different expectations and requirements for the functions, environment, facilities, and other aspects of pocket parks. Therefore, how to scientifically and reasonably optimize the landscape design of Pocket Park according to user needs has become an urgent problem to be solved.

## 2、 Research objective

Clarify the core issues in the use of Pocket Park by citizens, construct a pocket park organizational landscape design method system applicable to small and medium-sized cities in China (taking Changzhou as an example), and verify its

feasibility through specific design schemes, providing theoretical and practical references for the humanized and localized design of pocket parks in similar cities.

**3、 Research object**

Pocket Park Landscape Design

**4、 Research content**

Means of landscape design in the organization "pocket-park" (on the example of China)

**5、 Research Task**

- Analyze relevant literature on the research topic;
- Analyze the practical experience of professional designers from developed countries in pocket park landscape design;
- Identify and organize landscape design methods for pocket parks using China as an example;
- Propose general recommendations for organizing landscape design in pocket parks using China as an example to implement relevant principles;
- Based on the research results and proposed suggestions, develop a landscape design plan for Pocket Park organization using China as an example.

**6、 Research scope**

- Time range: Historical investigation covers the period from the end of the 20th century to the first 25 years of the 21st century
- Regional scope: including practical experience in pocket park landscape design in major Asian countries as well as European and American countries.

**7、 Academic innovation**

The academic innovation of this study is reflected in the following first proposed

results:

- Based on empirical research, the core problem system faced by citizens when using pocket parks has been systematically sorted out, providing precise basis for the demand side of pocket park design;
- Taking Changzhou, China as a typical case, this paper analyzes the local characteristics of pocket park landscape design in small and medium-sized cities from multiple dimensions such as regional culture, spatial organization, and total element design;
- Based on the spatial limitations of pocket parks and the needs of citizens, a comprehensive system design method for pocket parks that integrates functionality, ecology, culture, and art has been proposed;
- It reveals the gap in the practical field of pocket park research in small and medium-sized cities, providing new directions for differentiated design research of pocket parks targeting different regions and populations in the future.

## 8、 Research Methods

To conduct this study, the following methods were employed:

- Analysis method: Systematically review relevant literature on Pocket Park, summarize the current research status of the topic, and clarify the research foundation and shortcomings in the field;
- Comprehensive method: Extract the landscape design method of pocket park organization using China as an example;
- Comparison method: Compare the needs of different user groups in the space;
- Abstract Method: Formulate conclusions and recommendations regarding the landscape design of Pocket Park;

- Chart analysis method: Create tables and diagrams;
- Experimental method: Apply the research results to the construction of personal plan concepts and further use them for the formulation of design plans.

**9、 Research value**

- Theoretical value: Summarizing research data, organizing landscape design methods for Pocket Park, and providing necessary support for cultivating future design professionals. The suggestions put forward during the research process can serve as teaching reference materials for undergraduate and master's students majoring in "Environmental Design" and "Architectural Landscape Environmental Design";
- Practical value: The research results can be applied to the design practice of building landscape environment construction characteristics.

**10、 Paper Structure and Length**

This thesis includes an introduction, three main chapters, conclusion, references, and appendix.

# Chapter 1 Research Status of the Project

## 1.1 Literature review related to the research topic

Pocket Park, as a form of urban public open space, originated from the "Neighborhood Public Space" project led by Professor I L McHart from the Department of Landscape Architecture at the University of Pennsylvania in the United States[1]. In the 1960s, in order to solve the problem of abandoned land and waste disposal in the corners of the city, Philadelphia built numerous small parks with the help of funding from the US government to maintain the cleanliness of the community. Subsequently, influenced by Philadelphia, other cities in the United States also sparked a craze for small parks. However, the increase in the number of such parks has not truly solved the problem of people's needs, resulting in a less than optimistic situation for the use of small parks. In 1981, Kaplan R conducted a satisfaction tracking survey on a pocket park called "Liberty Square" in Michigan, analyzing the reasons why users were satisfied. The results showed that simply owning a pocket park could bring great satisfaction to the surrounding residents[2]. In 2003, Woolley pointed out that Pocket Park provides residents, especially the elderly and children, with a place for leisure and entertainment, increasing the sense of security and belonging in the community[3]. In 2012, Jo studied the distribution and planning strategies of pocket parks in the center of Seoul and proposed suggestions for optimizing the layout of pocket parks to ensure that their service area covers more residents[4]. In 2014, Cohen D. A found through research that people value the safety of Pocket Park more[5]. In 2015, Lee Y. C conducted research on urban pocket parks and small green spaces based on public demand and attitudes, and proved that "accessibility" is the main reason why people go to parks, and lack of management is

the main reason why they don't go often[6]. In 2016, Huston Gibson evaluated residents' perceptions of Pocket Park based on park preferences and interviews with community members, and proposed that Pocket Park is beneficial for promoting community interaction[7]. In 2017, Park. K believed that perceived accessibility is an important factor affecting the use of pocket parks at the perceptual level[8]. In 2018, Sinha A analyzed the significance and usage of urban pocket parks for communities[9]. In 2020, Iorpenda delved deeper into the open spaces that pocket parks bring enormous benefits to communities and their citizens in terms of economy, health, environment, society, and overall quality of life[10]. In 2021, Salih and Kerishnan conducted questionnaire surveys on users in western Baghdad and Malaysia respectively, focusing on the safety and social interaction functions of Pocket Park, and proposed important improvement strategies [11] [12]. In 2023, Rosso et al. discussed the challenges of inserting traditional parks in urban areas and emphasized the significance of urban pocket parks in improving comfort under different strategies [13].

China's theoretical research on pocket parks is relatively late, and overall the progress of pocket parks in China can be divided into a preliminary exploration period, a construction research period, and a vigorous development period. In 1989, Professor Zhang Chunyang and Professor Guo Enzhang first proposed the concept of pocket green space, elaborating on its characteristics, classification, existing problems, and related suggestions [14]. As a type of urban green space, pocket green spaces are not considered true pocket parks due to the lack of formal park functions and infrastructure for leisure and entertainment. However, they have opened up a new perspective for China to explore micro parks. In 2007, Professor Zhang Wenying's

research was regarded as an important milestone in the study of pocket parks in China. By introducing the development process of pocket parks in the United States, the design and construction of excellent pocket parks were analyzed for the first time, and it was clearly proposed that pocket parks refer to small open spaces in cities. They are often scattered, dispersed or hidden in urban landscapes, directly serving residents, and call on Chinese scholars to strengthen their research on small amusement parks[15]. Chinese scholars have sparked a wave of research on pocket parks, and the study of pocket parks has entered a preliminary exploration period. In 2009, Wang Jin analyzed 12 pocket parks abroad and 11 pocket parks in China, and found that the design of pocket parks in China was insufficient. He provided guidance and conducted innovative design methods research on public facilities, water features, etc. [16].

The number of pocket parks in various cities is increasing day by day, and the construction of pocket parks has a certain theoretical reference. Pocket parks have entered the research period of construction. Due to the lack of regional characteristics between different cities, there are similar phenomena. Scholars have begun to focus on how to implant regional culture and characteristics into pocket parks. In 2011, Shen Jun conducted on-site classification surveys and analyzed three major cities, Shanghai, Beijing, and Nanjing. This means that Chinese scholars have realized that pocket parks are an important component of green infrastructure in high-density urban areas and have begun to propose different local characteristic designs for different cities[17]. In 2012, Ma Jie took foreign pocket parks as reference targets and explored the design system of urban pocket parks that adapts to regional culture and social needs, referencing the design strategies of excellent pocket parks[18]. In 2015,

Hu Yue conducted an in-depth analysis of the shortcomings of public open spaces in the Shichahai area of Beijing and the lack of Beijing's regional characteristics. He proposed the principle of integrating regional culture into design, pursuing simplicity, unity, and coordination. Taking Beijing as an example, he proposed a universal design method for pocket parks in Chinese cities to clarify the design considerations for each constituent element of pocket parks[19]. In 2018, Deng Hongyu integrated horticultural therapy into the design of Pocket Park and analyzed foreign cases, involving methods such as garden therapy, environmental governance, game therapy, and garden therapy to improve the environment of Pocket Park[20]. In 2020, Lan Jie faced common urban ecological environment problems and proposed the importance and feasibility of applying pocket parks on the basis of urban sponge development to achieve urban environmental improvement [21]. In 2021, Jiang Baocheng summarized and integrated the theoretical concepts of "urban dual restoration" and pocket parks, and proposed design strategies for ecological restoration from the natural and artificial landscapes of pocket parks. He also proposed design strategies for urban restoration from three aspects: urban function, spatial image, and cultural space[22]. In 2022, Yue Xiaole proposed the combination of the "therapeutic landscape concept" and pocket parks. Taking the landscape renewal of pocket parks in urban communities as an example, from the perspectives of potential exploration and landscape creation, he proposed the creation of reasonable therapeutic spaces based on the characteristic needs of therapeutic environments[23].

## 1.2 Analysis of the problems faced by citizens when using pocket parks based on modern empirical research

With the deepening of China's urbanization process, "pocket parks" as precious green public spaces in high-density built-up areas are expected to improve residents' quality of life and urban microclimate. However, in practice, a large number of completed pocket parks have exposed many problems during their use, which have affected their efficiency and full utilization of social benefits. This section is based on empirical research and field investigations conducted domestically and internationally in recent years, systematically sorting out the core issues faced by citizens when using Pocket Park, aiming to provide a practical basis for the subsequent construction of a precise and humanized design method system.

### 1.2.1 Improper spatial layout and accessibility barriers

The "pocket" attribute of Pocket Park determines its limited scale, therefore, a scientifically reasonable spatial layout is the primary prerequisite for its successful operation. However, empirical research has shown that many pocket parks have blind site selection and fail to effectively couple with the population density, age structure, and behavioral flow of surrounding communities.

Some pocket parks are set up in narrow gaps between traffic roundabouts, elevated bridges, or buildings in pursuit of rapid development. Although these locations utilize urban "scraps" of land, their accessibility is extremely poor, with serious noise and dust pollution, and even traffic safety hazards, causing citizens to be "unwilling or afraid to go". For example, a study tracking and observing multiple pocket parks in the central urban area of Shanghai has found that pocket parks located at intersections with traffic arteries and lacking safe crossing facilities have actual service radii much lower than theoretical values, with extremely low usage rates among the elderly and children. In addition, the internal flow design of the park

is unreasonable, such as concealed entrances, winding paths, and rigid connections between functional blocks, which seriously affect the readability and convenience of the space, especially for elderly people with limited mobility and parents pushing strollers, posing obstacles (Іл. А. 1.2.1.1).

### 1.2.2 Insufficient response to single function and diversified demands

The user groups of Pocket Park cover different age groups such as children, teenagers, adults, and the elderly, as well as citizens from different professions and cultural backgrounds. Their demands for park functions have significant diversity and differences. However, currently a large number of pocket parks have fallen into the misconception of "one size fits all" in their design, with single functional configurations and a lack of deep consideration for specific user behaviors.

Most pocket parks only provide basic recreational seating and simple greenery, lacking safe and fun gaming facilities for children, sports and fitness spaces for teenagers, as well as aging friendly activity areas and fitness facilities for the elderly. The singularity of this function leads to the inability of the park to form sustained user stickiness. A survey conducted in Zhonglou District, Changzhou City showed that over 65% of the surveyed teenagers stated that the pocket parks around the community "have nothing to play with" and cannot meet their social and sports needs. At the same time, the division of functional areas did not consider the compatibility and interference of different activities, such as the quiet rest area adjacent to the noisy game area, resulting in conflicts in space use and reducing overall satisfaction.

### 1.2.3 Poor ecological quality and monotonous plant configuration

As an important component of urban green space systems, the ecological function of pocket parks is one of their core values. However, in construction,

ecological principles often give way to short-term visual effects and low maintenance costs.

The prominent manifestation is the single plant configuration, lack of multi-level composite community structure of trees, shrubs, and grasses, unclear seasonal changes, resulting in monotonous landscape, poor ecological stability, and inability to provide effective habitats for birds, insects, and other organisms. In addition, the phenomenon of "emphasizing landscape over ecology" is widespread, with a large use of hard paving, decorative structures, and imported ornamental grass and flowers, neglecting the application of local plants, resulting in weakened ecosystem service functions such as rainwater storage, cooling and humidification, and air purification. After conducting actual measurements on the microclimate of multiple pocket parks in Beijing, scholars found that parks with low vegetation coverage and high proportion of hard pavement had significantly higher surface temperatures in summer afternoons than parks with good surrounding vegetation, exacerbating the urban heat island effect. This' ecologically disabled 'design greatly reduces the potential of pocket parks in addressing climate change.

### 1.2.4 Lack of Service Facilities and Lack of Maintenance Management

Complete supporting facilities are the foundation for ensuring the comfortable and safe use of pocket parks by citizens. However, incomplete facilities are a common problem currently faced by pocket parks.

Specifically, there is a shortage of leisure seats, a single form, and a lack of comfort considerations; The serious lack of sun and rain protection facilities makes the park almost unusable in rainy, snowy, or hot summer weather; Insufficient or improperly designed nighttime lighting poses safety hazards and shortens the

effective service time of the park; Unreasonable garbage bin setting leads to environmental hygiene problems; The lack of accessible facilities neglects the usage needs of people with disabilities. More importantly, many pocket parks have fallen into the dilemma of "rebuilding and neglecting management" after their completion. Lack of dedicated personnel for daily cleaning, facility maintenance, and plant care has led to facility damage, plant death, and dirty and chaotic environment, rapidly deteriorating into a "forgotten corner". This lack of management not only leads to the waste of public resources, but also seriously undermines the enthusiasm of citizens to use them.

### 1.2.5 Lack of cultural characteristics and weak regional identity

Pocket parks are not only recreational areas, but also important carriers of urban memory, showcasing regional culture, and promoting community identity. However, many pocket parks currently lack cultural depth and local characteristics in their design, falling into the trap of "symbolization" and "labeling".

Some designs rigidly apply traditional elements or so-called 'modern style', failing to integrate with the local historical context, folk customs, and industrial characteristics, resulting in the park landscape being out of place with the overall urban style, and failing to evoke a sense of belonging and identity among users.

For example, in Changzhou, a city with a rich history of canal culture and industrial heritage, some newly built pocket parks have failed to excavate and translate these unique regional genes, presenting a "standardized" appearance no different from other cities. The lack of cultural expression has reduced Pocket Park to a purely physical space, weakening its potential social value as a "glue" for community culture.

### 1.2.6 Lack of public participation mechanism and insufficient cultivation of community cohesion

The success of Pocket Park ultimately depends on the widespread use by citizens and active maintenance by the community. However, there is a general lack of public participation mechanisms throughout the entire process from planning, design to management.

As end-users, citizens' real needs and creativity are often excluded from the decision-making process, resulting in a disconnect between the built environment and usage expectations. At the same time, the lack of effective mechanisms to guide community residents in co governance and co management makes it difficult for the vitality of the park to be sustained. Looking at excellent cases abroad, such as Paley Park in New York, its success is largely due to the deep participation and support of surrounding communities and commercial institutions (Іл. А. 1.2.6.1). In China, the construction of pocket parks is mostly a government led "top-down" model, where citizens only act as passive recipients rather than active co builders, which limits the deeper social benefits of pocket parks in promoting neighborhood interaction and enhancing community cohesion.

In summary, based on modern empirical research analysis (Табл. Б. 1.2.1), it can be seen that pocket parks in China currently face complex problems in terms of spatial layout, functional configuration, ecological quality, service facilities, cultural expression, and management and maintenance at the level of citizen use. The root of these problems lies in the neglect of "human centered needs" and "regional context" in the design process, as well as the disconnect between planning, construction, and management processes. Therefore, future pocket park landscape design must start

from a problem oriented approach and shift towards a more refined, humanized, localized, and sustainable systematic method. This is precisely the core issue that the subsequent chapters of this study aim to explore and address.

## 1.3 Research Methods

General scientific cognitive methods were used in the research process.

By systematically reviewing relevant literature on Pocket Park, summarizing the current research status in this field, and clarifying the foundation and shortcomings of existing research;

Based on literature analysis, extract the organizational principles and design methods of pocket park landscape design using China as an example;

Compare the differences in demand for pocket park space among different user groups, such as children, the elderly, and surrounding residents;

Summarize and form an overall conclusion and optimization suggestions for the landscape design of Pocket Park;

Using visual tools such as tables and diagrams to assist in analyzing and researching data and designing structures;

Apply research results to specific design practices, guide the construction of personal design concepts, and develop and deepen subsequent design plans.

## Conclusion of Chapter One

Through a systematic review of relevant literature on the Pocket Park project and in-depth analysis of modern empirical research, this chapter clarifies the current research foundation, practical pain points, and core directions in the field of Pocket

Park landscape design. The specific conclusions are as follows:

1. Research has confirmed that pocket parks, as a key carrier of urban "stock space" renewal, have irreplaceable value in improving residents' quality of life, improving urban microclimate, and enhancing community cohesion. The current focus of domestic and foreign researchers has shifted from "whether to build pocket parks" to "how to build high-quality pocket parks that meet human needs and adapt to regional characteristics", especially focusing on optimizing core dimensions such as functional adaptability, ecological sustainability, and cultural locality.

2. Research has determined that the landscape design of Pocket Park needs to adopt a comprehensive approach of "demand problem strategy" linkage, fully considering the differentiated needs of different user groups. There are significant differences in the functional (such as gaming, socializing, resting, and fitness), spatial (such as privacy and openness), and facility (such as age friendliness and accessibility) needs of pocket parks among children, youth, middle-aged, and elderly groups. Moreover, the user experience of a single group may be disrupted by the activities of other groups. Therefore, the design needs to take into account both "group specific needs" and "space compatibility and symbiosis".

3. Through cross analysis of literature research and empirical research results, the core element system of high-quality pocket park landscape design has been clarified. At the spatial level, it is necessary to address the issues of accessibility and layout rationality. At the functional level, it is necessary to cover "diverse activity scenarios". At the ecological level, it is necessary to strengthen the application of local plants and the implantation of sponge functions. At the facility level, it is necessary to improve the supporting facilities of "rest, lighting, and accessibility". At

the cultural level, it is necessary to integrate "regional history and folk characteristics". At the management level, it is necessary to establish a "long-term maintenance and public participation" mechanism. These elements together form the foundation of the use value of pocket parks.

Based on the above research, a preliminary framework for the core direction of pocket park landscape design has been extracted: guided by "human needs", based on "efficient use of space", supported by "ecological sustainability", and highlighted by "cultural empowerment". Subsequent chapters will focus on this framework to further construct systematic design principles, strategies, and methods, providing theoretical basis for pocket park design in small and medium-sized cities.

# Chapter 2: Pocket Park Organizational Landscape Design Method Taking China as an Example

## 2.1 Core Principles of Pocket Park Landscape Design

Based on the functional positioning, diverse needs of citizens, and regional cultural characteristics of pocket parks under the background of "stock renewal" in Chinese cities, and referring to the general theories and practical experience in the field of landscape design, this study extracts four core principles of pocket park landscape design from the perspective of "solving practical problems, meeting usage needs, and highlighting local characteristics", providing a guiding framework for subsequent design strategies and methods.

### 2.1.1 Functional principle

The principle of functionality is the foundation of pocket park design, aiming to meet the usage needs of different groups and scenarios through scientific functional configuration and spatial division, and maximize the utilization of limited space. The core logic lies in the precise matching of needs and space (Іл. А. 2.1.1.1), which can be implemented from three aspects:

Age specific functional adaptation: Exclusive facilities are configured to meet the differentiated needs of children, youth, middle-aged, and elderly groups - providing a safe and protective game area for children aged 3-12 (such as low slides, sand pits, interactive science popularization devices), providing lightweight exercise space for teenagers (such as mini basketball courts, badminton courts, fitness equipment), planning elderly friendly rest and fitness areas (such as armrests, Tai Chi practice fields, chess and card tables), and reserving temporary office corners for commuters (long tables with charging interfaces, sunshade canopies) to ensure that all

age groups have "somewhere to go and things to use".

Temporal functional compatibility: Consider the differences in usage scenarios during different time periods to achieve flexible conversion of spatial functions. For example, in the morning (6:00-8:00), the middle-aged and elderly fitness area will be combined with open spaces to meet the needs of fitness and morning exercises; During the day (9:00-17:00), the children's play area and parent-child interaction area are open, with temporary storage cabinets and drinking water facilities provided; In the evening (18:00-21:00), some sports areas will be converted into community social spaces through lighting adjustments, suitable for activities such as square dancing and small markets, extending the effective service hours of the park.

Conflict functional isolation: Separate the "dynamic and static" functional areas through elements such as plants, landscape walls, and ground paving to avoid interference from use. For example, setting up noisy children's play areas and sports areas at the edge of the park, maintaining an appropriate distance from surrounding buildings; Set up a quiet resting area and reading corner at the core of the park, creating a semi private space through trees and shrubs to isolate noise and ensure that the user experience of different groups with different needs is not affected by each other.

### 2.1.2 Ecological principle

The ecological principle focuses on the ecological service function of pocket parks, combined with the requirements of China's "sponge city" construction and local ecological characteristics (Іл. А. 2.1.2.1), to achieve "maximum ecological benefits" in limited space, including three core requirements:

Priority allocation of native plants: Select native plants that are adapted to the

local climate, have strong stress resistance, and have low maintenance costs, and build a multi-level composite plant community of "trees, shrubs, and grasses". For example, in the Changzhou area, Ligustrum lucidum and Cinnamomum camphora can be used as upper level trees (to provide shade), roses and wisteria can be used as middle level shrubs (to enrich seasonal conditions), and Ophiopogon japonicus and Oxalis can be used as lower level ground cover (to cover exposed land); At the same time, avoid using plants that are prickly, toxic, or prone to allergies (such as kumquat and oleander) to ensure ecological safety.

Sponge function integrated into design: Combining the terrain and spatial layout of Pocket Park, incorporating sponge city technology to achieve rainwater infiltration, retention, storage, and utilization. For example, permeable paving (permeable bricks, permeable concrete) is used in the square area, grass ditches and rain gardens are set up at the edge of green spaces, and small water reservoirs (also serving as landscape water features) are arranged in low-lying areas. This not only solves the problem of water accumulation in rainy days, but also collects rainwater for plant irrigation, reducing maintenance costs.

Low intervention and sustainable maintenance: Reduce high energy consuming and high maintenance landscape elements (such as large fountains and rare exotic plants), and use materials and plants with strong weather resistance and easy maintenance; At the same time, reserve "community co governance" space, such as setting up horticultural areas that can participate in planting, encouraging residents to claim and maintain flowers and shrubs, which not only reduces management costs but also enhances citizens' sense of belonging to the park, achieving sustainable ecological maintenance.

### 2.1.3 Humanistic principle

The principle of humanism emphasizes the "cultural attributes" and "emotional value" of pocket parks. By excavating and translating regional history and folk customs (Іл. А. 2.1.3.1), the park transforms from a "simple green space" to a "cultural carrier" that carries community memory and promotes neighborly communication. The core is reflected in two aspects:

Translation of local cultural symbols: Incorporating local cultural elements into landscape design to avoid a "one size fits all" approach. Taking Changzhou as an example, symbols such as canal culture (such as boat oars and arch bridge shapes), industrial relics (such as textile gears and machine tool parts), intangible cultural heritage techniques (such as comb patterns and random needle embroidery patterns) can be extracted and applied to landscape walls, ground paving, and facility shapes. For example, comb patterns can be used to design the backrest of leisure seats, canal wave lines can be used to divide ground functional zones, and industrial gear shapes can be used to create landscape sculptures, allowing citizens to experience regional culture and enhance their sense of identity during use.

Social space reservation and guidance: Promote neighborhood interaction and meet the social needs of citizens through space design. For example, setting up flexible combination of leisure seats (such as circular and curved seats, convenient for multi person communication), reserving small activity venues (which can hold community markets, handicraft classes, festival celebrations), and supporting "social media" such as community bulletin boards and activity registration QR codes; At the same time, it is necessary to retain "informal social spaces" (such as open lawns and open spaces under forests), adapt to spontaneous activities such as chatting, walking

dogs, and taking care of children, and strengthen the "community cohesion" role of Pocket Park.

### 2.1.4 Accessibility principle

The accessibility principle is the core embodiment of the "service" of pocket parks, aimed at eliminating spatial barriers and ensuring that all groups (including the elderly, disabled, parents of strollers, etc.) can conveniently and safely use the park, covering three specific requirements:

External accessibility optimization: Priority should be given to selecting locations close to densely populated areas such as community entrances and exits, bus stops, and schools, ensuring a 5-10 minute walk (in line with the "15 minute living circle" requirements); If the park is located next to a road, it needs to be equipped with safe pedestrian crossing facilities (such as zebra crossings, pedestrian overpasses, traffic lights) to avoid traffic hazards; At the same time, optimize the entrance design to ensure that it is eye-catching (such as setting up iconic landscapes and guiding signs), without steps or thresholds (or supporting ramps, with a slope not greater than 1:12), and convenient for wheelchairs and strollers to pass through.

Internal accessibility: The design of the park's internal traffic flow should be simple and clear, with a main road width of no less than 1.5 meters (to accommodate two people or wheelchair access) and a secondary road width of no less than 1 meter; The ground paving should be smooth and slip resistant (avoiding the use of materials that are prone to water accumulation and tripping), with no significant height difference between different functional areas. If there is a height difference, ramps (Іл. А. 2.1.4.1) and handrails (Іл. А. 2.1.4.2) should be set up; At the same time, guide signs should be set up at key nodes (entrances, intersections) to indicate the location

of functional areas and the direction of accessible passages, making it convenient for citizens to quickly locate them.

Facility accessibility adaptation: All facilities need to consider the usage needs of special groups (Іл. А. 2.1.4.3), such as controlling the height of rest seats at 40-42cm (suitable for elderly people getting up), and reserving wheelchair parking space next to the seats; Fitness equipment should be labeled with usage instructions and target audience, and some equipment should have adjustable functions (such as height adjustable walking machines); The lighting should cover the entire route, with an average illuminance of not less than 20lux (in accordance with the "Urban Lighting Design Standards"), avoiding dark corners, ensuring safe use at night, and truly achieving "crowd friendliness".

In summary, implementing the four core principles of functionality, ecology, humanity, and accessibility (Табл. Б. 2.1.1) in the landscape design of Pocket Park can form a design logic loop of "demand adaptation, ecological low consumption, cultural roots, and group friendliness", achieving the following specific effects:

1. Solve the problem of single spatial function by designing with age, time, and isolation to enable limited space to accommodate the diverse needs of all age groups and improve usage efficiency;

2. Strengthen the ecological value of micro spaces, create "urban micro oases" that combine landscape and ecological service functions through local plants, sponge technology, and low intervention maintenance, and help alleviate the heat island effect;

3. Awaken regional cultural identity and upgrade pocket parks from "green spaces" to cultural carriers that carry community memories and promote neighborly

communication through local symbol translation and social space guidance;

4. Eliminate barriers to use, optimize external site selection, ensure accessible access and facility adaptation internally, and ensure that all groups such as the elderly, disabled, and children can use it conveniently and safely;

5. Provide a unified guidance framework for subsequent spatial organization, landscape element design, and cultural empowerment, avoid fragmented design, and ultimately form a pocket park model that is "small yet refined, small yet beautiful, and small yet useful", suitable for the stock renewal needs of small and medium-sized cities in China.

## 2.2 Spatial Organization Strategy of Pocket Park

Due to its small yet refined spatial attributes, Pocket Park's spatial organization needs to achieve the goal of "functional efficiency, comfortable experience, and clear flow" within a limited scale. Based on the usage needs of citizens and regional spatial characteristics in small and medium-sized cities in China, and referring to the core logic of "spatial stratification and vertical utilization" in landscape design, this study constructs a pocket park spatial organization strategy system from two dimensions: spatial zoning and vertical design, to ensure maximum spatial utilization and optimal user experience (Табл. Б. 2.2.1).

### 2.2.1 Space partitioning

The spatial zoning is centered around "adapting to diverse needs and reducing usage conflicts", combined with the scale and surrounding environment of Pocket Park. It adopts a hierarchical layout model of "core transition edge" to modularize and integrate spaces with different functional requirements (Іл. А. 2.2.1.1), as

follows:

1. Core functional area: Concentrate on carrying high-frequency activity needs

The core functional area is located at the geometric center of Pocket Park or near the main entrance for pedestrian traffic, and is the most frequently used area by citizens. It needs to prioritize accessibility and comfort, and mainly includes two types of core spaces:

Comprehensive activity module: with an area ratio of about 30% -40%, it is suitable for parent-child interaction, community socialization, small collective activities and other needs. It can set up open lawns (Іл. А. 2.2.1.2), small activity squares, supporting drinking water facilities, charging interfaces, temporary storage cabinets and other service facilities; It is possible to reserve a "morning exercise area" (for elderly people to exercise in the morning) and a "parent-child area" (for children to play during the day) based on residents' living habits, and achieve temporal functional conversion through movable isolation barriers.

Core Rest Module: Adjacent to the Comprehensive Activity Module, occupying approximately 15% -20% of the area, with "quiet and comfortable" as the core, dense shade is formed by trees (such as camphor and privet), accompanied by elderly friendly seats with armrests, reclining landscape corridors (Іл. А. 2.2.1.3), and small reading corners are set up to meet the needs of citizens for rest, reading, and short-term office work; At the same time, soft separation is formed between shrubs and ground paving and activity areas to isolate noise interference.

2. Transition functional area: connecting the core and edge to achieve functional buffering

The transitional functional area is located between the core area and the edge

area, accounting for about 20% -25% of the total area. It plays a dual role of "functional connection" and "ecological buffering", mainly including two types of transitional spaces:

Semi private interactive module: Targeting small-scale social needs, group style rest units are set up, forming a semi enclosed space through landscape walls, flower stands, and tall shrubs, ensuring privacy while not isolating the line of sight.

Ecological buffering module: Combined with sponge city design, layout rainwater gardens, grass ditches, small water features, planting aquatic plants and moisture resistant shrubs, not only solving the problem of rainwater discharge in the core area, but also softening the spatial boundaries through ecological landscape; At the same time, this module can serve as a carrier for "natural education", setting up plant science popularization boards to meet children's needs for understanding nature.

3. Edge functional area: Adapt to special needs and optimize space utilization

The edge functional area is located on the periphery of Pocket Park, adjacent to urban roads or building boundaries, with an area of about 15% -20%. It mainly carries the needs of "functional supplementation" and "environmental isolation", and includes two types of edge spaces:

Special functional module: Set up independent and non interfering spaces for specific groups' needs, such as children's play areas. For children aged 3-12, set up low slides (Іл. А. 2.2.1.4), sand pits, climbing nets (Іл. А. 2.2.1.5), set up parental care seats around, and use soft flooring such as EPDM plastic (Іл. А. 2.2.1.6); This module needs to be kept away from the main roads of the city to avoid noise and exhaust pollution. At the same time, it should be separated by trees to ensure safe use.

Boundary isolation module: If the park is adjacent to roads or buildings, a "green

isolation zone" should be set up at the edge, planted with tall trees (such as Luan tree and plane tree) and dense shrubs (such as side cypress and holly), paired with low walls, to isolate external noise, dust, and visual interference, creating a "quiet in the midst of noise" park atmosphere, reducing the impact of traffic noise on the core area, and improving overall comfort.

### 2.2.2 Vertical design

Vertical design is aimed at addressing the pain point of limited flat space in Pocket Park. Through terrain micro transformation and three-dimensional landscape creation, it expands the spatial hierarchy and usage functions, while solving practical problems such as drainage and shading. The specific strategy includes three aspects:

1. Terrain micro transformation: height difference design combined with functional requirements

Based on the original terrain of the site, micro elevation differences are processed (Іл. А. 2.2.1.6) to avoid large-scale earthworks, while achieving functional zoning and experience optimization through elevation differences:

Submerged Space: In the core resting area or semi private interactive area, design a sunken space that connects with the surrounding area through steps or gentle slopes, and is equipped with enclosed landscape walls and trees to form a "hidden" resting space, isolating external views and noise; For example, chess and card tables and long chairs can be set up in the sunken space, becoming an exclusive area for elderly people's daily social activities. At the same time, the sunken design can naturally collect rainwater, combined with permeable pavement and grass ditches, to achieve rainwater collection.

Lift up space: In the children's play area or viewing node, design a lift up

platform of 80-150cm (supported by concrete or steel structure). The upper level of the platform is used as a children's play area (with small climbing facilities and viewing platforms), and the lower level space can be used for parking (non motorized vehicles), storage (tool room), or setting up rest seats (to avoid sun and rain).

2. Stereoscopic Landscape Creation: Expanding the Ecological and Functional Value of Vertical Space

Through the three-dimensional landscape design of "ground middle high altitude", enrich the spatial hierarchy and supplement functional requirements:

Middle level landscape: The dual function of hedgerows and flower stands is achieved by setting up 1.2-1.5m high hedgerows (such as holly and boxwood) around the boundaries or core areas of spatial zoning, which not only achieve soft separation of functional zoning but also do not hinder visual communication; At the same time, landscape flower stands should be built around the rest and activity areas, and vines (such as wisteria and lingxiao) should be planted to provide shade in summer and create a landscape highlight in autumn. Long benches can be placed under the flower stands to expand the rest space (Іл. А. 2.2.1.7).

High altitude landscape: ecological supplementation of roofs and walls. If Pocket Park is adjacent to a building, vertical greening can be designed on the building walls, and roof gardens can be designed on the roofs of the park facilities. This not only increases the green area and improves the microclimate, but also weakens the boundary between the building and the park through three-dimensional greening, creating an "immersive" green space.

## 2.3 Design Methods for Landscape Elements of Pocket Park

The landscape elements of Pocket Park are the concrete expression of design principles and spatial strategies, which need to be closely combined with China's regional climate characteristics, diverse usage needs of citizens, and subsequent maintenance capabilities. From the three core dimensions of hard landscape, plant landscape, and water landscape, a design method system of "functional priority, ecological adaptation, and cultural integration" should be constructed. It is necessary to ensure that all elements meet the basic functional requirements, while also conveying regional cultural connotations and improving the microclimate of the site through detailed design, ultimately achieving the design goal of "small space carrying great value".

### 2.3.1 Hard Landscape Matching

Hard landscape, as the spatial framework of pocket parks, covers three categories: ground paving, landscape structures, and service facilities. Its design needs to balance functionality, safety, and culture, avoid excessive decoration, prioritize practical value and durability, and integrate regional cultural symbols, making hard landscape both a "carrier of use" and a "cultural medium".

Ground paving needs to be adapted to the material requirements of different functional zones, while achieving spatial guidance and functional division through differences in color and texture (Іл. А. 2.3.1.1). Core activity areas (such as squares and children's play areas) should be made of materials that are resistant to pressure, slip, wear, and have water permeability. The children's play area should be additionally paved with EPDM plastic (Іл. А. 2.3.1.2), with a thickness controlled at 5-8cm, creating a safe and comfortable gaming atmosphere through soft blue and

green tones, and reducing the risk of children falling and getting injured. The passage route needs to distinguish between primary and secondary. The main road is made of wide and dark gray permeable bricks, with light gray edge markings indicating the direction. The secondary road can be made of crushed stone or anti-corrosion wooden boardwalk, suitable for forest or waterfront areas, guiding the direction of pedestrian flow through material differences. Resting areas (such as under forest clusters and around seats) can be paved with a combination of permeable bricks and crushed stones, creating a peaceful atmosphere through material changes and contrasting with noisy activity areas (Іл. А. 2.3.1.3).

Landscape structures should follow the principle of "lightweight and practical", avoid large-scale design, and balance functional requirements and cultural expression (Іл. А. 2.3.1.4). At the same time, the top of the scenic wall can extend a 30cm wide seating area, which also serves as a seat back, maximizing the use of space. Flower racks and corridors should be made of steel or anti-corrosion wood structures, with a span of no more than 6m and a height of 2.2-2.5m, to ensure that there is no sense of oppression when adults pass through; A long seat with armrests is set up below, and a solar powered lighting fixture is installed on the top to achieve multifunctional integration of "shading, resting, and lighting". Small sculptures should be made of weather resistant materials such as stainless steel and fiberglass, and placed at the entrance or core activity area as the visual focus. At the same time, the surface should be rounded to avoid safety hazards caused by sharp edges.

Service facilities should be based on the standard of "whole population adaptation", covering basic needs such as rest, lighting, and storage, while also taking into account the usage details of special groups. Resting seats are divided into

grouped and independent types. The grouped type uses curved anti-corrosion wooden seats, equipped with armrests and backrests, and a 20cm space is reserved below the seat for wheelchair users to place their legs; The independent seats are set under the forest or in the edge area, with a height of 40-42cm, and some are equipped with small desks with charging interfaces, suitable for temporary office needs (Іл. А. 2.3.1.5). The lighting facilities adopt a layered design of "basic lighting+key lighting". The basic lighting uses warm white courtyard lights with a height of 2.5-3m and a spacing of 8-10m. The key lighting uses spotlights or hidden light strips to highlight landscape focal points such as sculptures and flower stands.

### 2.3.2 Plant Landscape Configuration

Plant landscape is the core carrier of the ecological function and aesthetic value of Pocket Park. It is necessary to combine climate characteristics, prioritize the use of local plants, and build a plant community with "rich layers, distinct seasons, and low maintenance costs". At the same time, toxic and thorny varieties should be avoided to ensure the safety of the entire population, so that plants can not only play an ecological role, but also become an important part of regional landscape characteristics.

Plant selection should focus on the three criteria of "locality, safety, and functionality", and select suitable varieties from the local plant library. As the upper structure of the tree layer, priority should be given to selecting varieties with good shading effects and stable growth, such as evergreen camphor and Ligustrum lucidum, which can provide sufficient shade for the site in summer; Fallen Luan trees produce yellow flowers in summer and red fruits in autumn, with rich seasonal changes; Willow trees can be used in waterfront areas, and soft branches can enhance spatial

flexibility. The diameter at breast height of the trees should be controlled at 15-20cm to ensure the survival rate of transplantation. The planting spacing should be 5-8m to avoid excessive density affecting the light of the lower plants, while ensuring that the tree crown can cover the resting and activity areas. The shrub layer is used as the middle layer structure, and local varieties with long flowering period and pruning tolerance are selected, such as the summer flowering Purple Wisteria and Hibiscus, which have rich colors and are tolerant to poor soil conditions; Evergreen holly can be pruned into hedgerows for spatial zoning; It is necessary to avoid planting thorny shrubs such as wolfberry in the recreational and gaming areas to prevent children from getting injured. The ground cover layer should be selected with shade resistant, trampling resistant, and strong coverage varieties. Ophiopogon japonicus and sorrel grass can be planted under the forest, iris can be adapted to waterfront or humid areas, and trampling resistant knotweed should be selected around the game area. The overall ground cover rate should not be less than 90%, avoiding bare land (Табл. Б. 2.3.1).

The construction of plant communities requires the use of a multi-level composite structure of "trees shrubs grasses", and the layout density should be adjusted according to spatial functional requirements (Іл. А. 2.3.2.1). The core activity area adopts a simple structure of "trees+ground cover" around it. The trees are selected from camphor or Luan trees, with a spacing of 6-8 meters. Ophiopogon japonicus and Oxalis are planted under the forest to avoid shrubs blocking the view and ensure that the activity area is open and transparent; At the same time, planting 1-2 rows of roses at the edge of the activity area to form flower belt boundaries not only divides the space but also enhances aesthetic value. The surrounding area of the

recreational area adopts a dense structure of "trees+shrubs+ground cover". The trees are selected from Ligustrum lucidum or weeping willows, and the understory is matched with crape myrtle and Ophiopogon japonicus to form a semi private space; Gardenia can be planted around the seat, which has a fresh fragrance when it blooms from May to July, improving the comfort of rest. At the same time, the density of shrubs can be controlled to ensure that parents have unobstructed vision when taking care of children. The edge isolation zone adopts a structure of "tall trees+dense shrubs". The trees are selected from plane trees or Luan trees, with a height of 8-10m. The lower layer is planted with 1.5-1.8m high holly hedgerows to form a green isolation zone, isolating noise and dust from urban roads; Planting irises and dandelions on the inner side of the isolation zone enriches the landscape layers while providing habitats for birds and insects, enhancing ecological diversity.

The design of plant seasons should be combined with the climate of each season to ensure "scenery in all seasons" and enhance the year-round ornamental value. In spring, with "flower scenery" as the core, cherry blossoms are planted around the core activity area, paired with iris flower belts to create a lively atmosphere of spring; In summer, we rely on evergreen trees such as camphor and privet to provide shade, and pair them with summer flower varieties such as crape myrtle and hibiscus to alleviate the visual sensation of heat; In autumn, the emphasis is on "leaf color and fruit", creating a colorful autumn scenery through the red fruit of Luan tree, a small amount of golden leaves of Ginkgo biloba, and the combination of evergreen Ophiopogon japonicus; In winter, evergreen plants such as camphor, privet, and holly are preserved to maintain the landscape skeleton. Wax plum is planted around the recreational area, and the fragrance is strong when it blooms from December to

February, adding vitality to the winter season.

### 2.3.3 Water Landscape

Water landscape is an important element in enhancing the vitality and ecological function of pocket parks, but it needs to be combined with the maintenance capacity of small and medium-sized cities, avoid large and high consumption water features, and prioritize the selection of "miniaturized, ecological, and easy to maintain" forms. At the same time, through comprehensive safety design, ensure the safety of children, the elderly, and other groups to use, making water both a "landscape highlight" and an "ecological carrier".

The selection of water body form should focus on "miniaturization and functionality" (Іл. А. 2.3.3.1) to reduce subsequent maintenance costs. The core landscape nodes can be equipped with shallow water pools, with an area controlled at 10-20 square meters and a water depth of 30-50cm, which not only meets the water needs of children but also has no drowning risk; Anti corrosion wooden platforms and recreational chairs are set up around the pool for the convenience of citizens to enjoy the water.

## 2.4 Cultural Empowerment Design Methods for Pocket Parks

As the public space closest to citizens' lives in the city, Pocket Park should not only be an ecological oasis and resting place, but also a "cultural container" that carries urban memory, conveys regional culture, and consolidates community emotions. Cultural empowerment design needs to break through the superficial mode of "symbol stacking", and achieve the goal of "space as a cultural carrier and use as a cultural experience" through three major paths: historical and cultural implantation,

integration of folk activities, and artistic intervention in design. This will elevate pocket parks from "physical spaces" to "cultural spaces" with spiritual value and emotional identity. The following provides a systematic explanation of the core logic and practical methods of cultural empowerment through case studies (Табл. Б. 2.4.1).

### 2.4.1 Historical and cultural implantation

The core of historical and cultural implantation is to explore the historical context and regional characteristics of the city, and transform them into perceptible and interactive spatial carriers through landscape language, allowing citizens to naturally touch history and identify with culture during use. The key to its design lies in "precise extraction+organic integration", avoiding rigid replication and achieving deep integration of culture and function.

The extraction of historical and cultural elements needs to focus on the core memory of the region, including dimensions such as historical events, traditional industries, architectural styles, and celebrity anecdotes. For example, for industrial heritage cities, elements such as factory building components, mechanical gears, and production tools can be extracted. For example, in the pocket park around Shanghai Yangshupu Power Plant (Іл. А. 2.4.1.1), landscape sculptures can be designed based on the retired pipelines and valves of the power plant, matched with red brick paving to echo the industrial architectural style, making industrial history an implicit narrative of the space; For historical and cultural cities, traditional architectural symbols and historical scenes can be extracted. Suzhou Pingjiang Road Pocket Park (Іл. А. 2.4.1.2) transforms garden flower windows into landscape wall patterns, and the ground is paved with replicated ancient street and alley textures, paired with local plants such as Chinese tallow and maple, creating an atmosphere of "small gardens

hiding ancient meanings"; For the hometown of celebrities, themed spaces can be designed around celebrity stories and poetry works. Inspired by "From Baicao Garden to Sanwei Bookstore", the Pocket Park around the hometown of Lu Xun in Shaoxing has set up "soapberry tree landscape area" and "private school scene sketches", making literary memories a space that can be experienced.

The transformation of elements should follow the principle of "functional priority, landscape expression", and achieve cultural implementation through hard landscapes, plant arrangements, identification systems, and other carriers. At the level of hard landscape, historical symbols can be transformed into paving patterns, landscape wall carvings, and facility shapes. Beijing Nanluoguxiang Pocket Park prints the hairpin pattern of the courtyard door on permeable bricks, and the seat design draws on traditional circular chair shapes, which not only meets the function of rest but also conveys the culture of Beijing; Nanjing Laomen East Pocket Park designed landscape lamp columns based on the pattern of Qinhuai lanterns, creating a scene of "lamp shadows reflecting the alley" when lit at night, echoing the historical tradition of Qinhuai Lantern Festival. At the level of plant configuration, local plants related to historical scenes can be selected. Peonies, peonies, and other Tang Dynasty palace flowers can be planted in the pocket park around Xi'an Datang Night City, paired with pine, bamboo, and plum "Three Friends of Winter" to reproduce the characteristics of Tang Dynasty garden plant configuration; Lotus and weeping willows are planted in the pocket park around West Lake in Hangzhou, echoing the natural imagery of the "Ten Scenic Spots of West Lake" and enhancing the recognition of regional landscapes.

Spatial narrative is a high-level form of historical and cultural implantation,

which allows citizens to experience a complete cultural context through "scene reconstruction+flow guidance" while walking. For example, Chengdu Kuanzhai Alley Pocket Park takes "old Chengdu life" as its narrative theme, and sets up "tea house rest area", "market folk area", and "courtyard landscape area" along the route in sequence. Through elements such as bamboo woven landscape walls, tea covered chairs, and blue tile flooring, it reconstructs the living scene of old Chengdu; Yangzhou Dongguan Street Pocket Park takes "canal culture" as its clue, from the paving of the "dock image" at the entrance, to the "canal ship sculpture" in the core area, and then to the "canal plant belt" in the peripheral area, forming a narrative flow of "dock canal river bank", allowing citizens to experience the evolution of canal culture while strolling.

### 2.4.2 Integration of Folk Activities

The core of integrating folk activities is to transform dynamic cultural resources such as regional customs, festival traditions, and community customs into the spatial functions and activity content of pocket parks, allowing culture to be inherited and revitalized through citizen participation and interaction, while enhancing community cohesion. The key to its design lies in "reserving elastic space+building activity carriers" to achieve bidirectional adaptation between space and activities.

Space reservation should take into account both fixed activity venues and flexible activity areas to meet the needs of different scales and types of folk activities. For small-scale regular activities, it is necessary to set up small semi private spaces, such as the "Yue Embroidery Experience Corner" in Guangzhou Yongqingfang Pocket Park, which is equipped with movable tables and chairs, display racks, and regularly holds intangible cultural heritage handicraft classes such as Yue Embroidery

and Guangcai; Suzhou Shantang Street Pocket Park has set up a "Pingtan Small Stage", equipped with simple speakers and foldable seats, and regularly holds Pingtan performances every week, becoming a fixed place for citizens to experience Wu Nong's soft language. For medium-sized festival activities, it is necessary to reserve open and flexible space. For example, the central square of Shichahai Pocket Park in Beijing is usually used as a place for citizens to rest and children's games. During the Spring Festival, it can be quickly arranged as a "New Year's Fair". During the Dragon Boat Festival, "Loong Boat Culture Exhibition" can be held, and the Mid Autumn Festival will be transformed into a "Moon Appreciation Tea Party". Through movable facilities, space functions can be flexibly transformed; Xiamen Zengcuoan Pocket Park reserves a "Folk Performance Area" equipped with detachable stages and lighting equipment, suitable for the development of folk performances such as Minnan opera and puppetry.

The construction of activity carriers should combine folk characteristics, design exclusive landscape facilities and interactive scenes, lower the threshold for event organization, and enhance citizen participation. For example, for traditional festivals, activity facilities that combine landscape and practicality can be designed. Pocket Park around Jinli, Chengdu has set up a "Spring Festival Couplet Writing Platform" at the entrance, which allows citizens to write Spring Festival couplets for free during the Spring Festival period; "Lantern Hangers" are set in the pocket park of Xi'an Huimin Street. During the Mid Autumn Festival and Yuanxiao (Filled round balls made of glutinous rice-flour for Lantern Festival), lanterns made by citizens can be hung to form a "lantern wall" landscape. In response to community customs, shared spaces that promote neighborhood interaction can be designed. The "shared drying

platform" in Shanghai's Lane Pocket Park not only meets the traditional needs of residents for drying clothes, but also serves as a place for neighborhood communication; Kunming Old Street Pocket Park has set up a "flower market flower rack" and holds a small flower market every week, echoing the folk characteristics of Kunming's "Flower Capital" and promoting community interaction.

### 2.4.3 Art intervention in design

The core of art intervention in design is to introduce elements such as public art, interactive installations, and creative design, breaking the aesthetic boundaries of traditional landscapes and making pocket parks an "artistic space" that inspires creativity, brings joy to the body and mind, and promotes interaction. The key to its design lies in "locality+interactivity+approachability", avoiding elitism and niche, allowing art to truly integrate into citizens' lives.

Public art installations are the core carriers of artistic intervention, which need to be combined with site functions and regional characteristics to create landscape highlights that are both ornamental and interactive. For example, for children, fun interactive installations can be designed. The "Imprint" cast steel sculpture in Shanghai's "Mirror Garden" Pocket Park (Іл. А. 2.4.3.1) is engraved with animal footprints on the surface, allowing children to explore the space along the footprints. At the same time, the sculpture forms a virtual real interaction with the mirror covered corridor, enhancing the fun of the space; The "Rainbow Slide" in Shenzhen Overseas Chinese Town Pocket Park features colorful artistic designs as the visual focus, satisfying children's gaming needs while enhancing the aesthetic value of the space through color and form. For the entire population, immersive art landscapes can be designed. Pocket Park (Іл. А. 2.4.3.2) around Beijing 798 Art District takes

"industrial art" as its theme, transforming abandoned steel pipes and iron plates into abstract sculptures, paired with graffiti walls and light and shadow installations, to create an immersive artistic atmosphere; The "Locomotive Art Installation" in Chengdu Dongjiao Memory Pocket Park combines industrial heritage elements with lighting design, making it a hot spot for citizens to check in and take photos at night. At the same time, rest seats are set up around it to achieve the combination of artistic appreciation and functional use.

Creative landscape design is an extension of artistic intervention, which enhances the aesthetic value and uniqueness of space through the artistic treatment of conventional landscape elements such as paving, plants, and facilities. In terms of pavement design, artistic patterns or material combinations can be used. In terms of plant configuration, an artistic atmosphere can be created through plant shapes and color combinations. In terms of facility design, service facilities such as seats, lighting fixtures, and garbage bins can be artistically transformed to enhance the artistic recognition of the space.

Community participatory art is a deep form of artistic intervention that encourages citizens to participate in artistic creation and spatial co construction, enhancing their emotional identification with the venue. This participatory design makes art no longer exclusive to professionals, but a tool for citizens to express themselves and unite emotions, further strengthening the community cohesion of Pocket Park.

## Conclusion of Chapter 2

1. Based on the core characteristics of "small space, high demand" in Pocket

Park, four core design principles of functionality, ecology, humanity, and accessibility have been extracted, clarifying the design logic loop of "demand adaptation, ecological low consumption, cultural roots, and group friendliness".

2. We have developed a modular spatial partitioning strategy that combines dynamic and static separation with functional aggregation, as well as a vertical design strategy that combines terrain utilization and three-dimensional expansion. These strategies address the core issues of compatibility with diverse demands and a single spatial hierarchy within a limited space.

3. A refined design method has been developed for the three major elements of hard landscape, plant landscape, and water landscape, clarifying the specific path of material selection, configuration logic, and cultural integration, ensuring that landscape elements have practicality, ecological value, and aesthetic value.

4. Three major cultural empowerment paths have been proposed, namely historical and cultural implantation, integration of folk activities, and artistic intervention in design, achieving the value upgrade of Pocket Park from a "green space" to a "cultural carrier" and providing spatial support for the dynamic inheritance of regional culture.

5. The various design principles, strategies, and methods are interrelated and organically integrated, forming a pocket park organizational landscape design method system that adapts to the stock renewal needs of small and medium-sized cities in China, providing systematic theoretical guidance for subsequent specific scheme designs.

# Chapter 3 Landscape Design Proposal for Pocket Park in Changzhou, China

Based on the landscape design method system of Pocket Park constructed in the previous text, combined with the regional cultural characteristics of Changzhou City, the diverse needs of citizens, and the actual conditions of the site (irregular plot, about 210 meters long, 80 meters wide, with a total area of about 12000 square meters), this chapter proposes specific design schemes from six dimensions: design concept, functional zoning, artistic image, decorative materials, plant selection, and lighting design. The theoretical methods are implemented into practical landscape schemes, providing concrete references for the construction of Pocket Park in Changzhou and similar small and medium-sized cities.

## 3.1 Design Concept

This plan is based on the core design concept of "Green Vein Integration City, Cultural Charm Residence", based on the three major regional genes of "Canal Culture, Industrial Heritage, and Jiangnan Culture" in Changzhou, and closely follows the four core principles of "functional adaptation, ecological low consumption, cultural empowerment, and group friendliness". The irregular 12000 square meter site will be transformed into a "playable, resting, sensory, and participatory" composite pocket park.

The design is based on a "linear green vein" as the skeleton, connecting various functional areas and echoing the narrow form of the site. At the same time, regional elements are implanted through "cultural nodes" to achieve "coexistence of natural and cultural landscapes, and equal emphasis on functional needs and emotional experiences". The plan emphasizes three core directions: firstly, functional complexity, meeting diverse needs such as children's games, youth sports, elderly rest,

and community socialization within a limited space; The second is ecological localization, prioritizing the use of local plants from Changzhou and integrating sponge city technology to create a low maintenance ecosystem; The third is cultural localization, transforming cultural symbols such as canal oars, comb patterns, and industrial gears into landscape elements, making parks a "miniature cultural living room" that carries urban memories. At the same time, the plan strictly follows universal design principles to ensure that citizens of all ages and different physical conditions can conveniently and safely use the venue, truly realizing the concept of "small space carrying great value".

## 3.2 Functional zoning of pocket park landscape design scheme

Based on the site form and usage requirements, the site is divided into several functional areas, which are both relatively independent and interconnected, maximizing the use of irregular space.

### 3.2.1 Entrance Square Area

Located at the main entrance of the venue, it serves as the "image gateway" of the park, responsible for gathering and displaying cultural activities. Set up iconic landscape structures at the entrance - boat shaped sculptures inspired by the transportation culture of the Changzhou Canal, with evergreen trees such as camphor and privet planted around the square, complemented by rose bushes, forming a "scenic entrance landscape throughout the four seasons"; Simultaneously set up accessible ramps and directional signs to ensure visitors can quickly locate each functional area.

### 3.2.2 Cultural Center Square Area

Located in the central core area of the venue, it is the core space for high-frequency activities of citizens, adopting "flexible design" to adapt to different scene needs. Usually used as a place for parent-child games, picnics, and rest, during festivals, it can be quickly set up as a community market or folk performance space in conjunction with the nearby square; Simultaneously set up leisure tables and chairs with charging interfaces, suitable for temporary office and community socializing of commuters.

### 3.2.3 Children's Play Area

Adjacent to the comprehensive activity area, designed according to age stratification to ensure safety and fun. Low slides, sand pits, and interactive science popularization devices are set up in the area for children aged 3-6. The ground is paved with EPDM plastic, and parental care seats are set up at the edges; Install climbing nets, balance beams, and small swings in the area for children aged 7-12, and create a gentle slope play area with micro terrain modifications to enhance exploration; Planting non thorny shrubs (such as holly and wisteria) around the area forms a natural boundary to isolate noise while ensuring safety and preventing children from getting lost.

### 3.2.4 Social Rest Area

Located in a relatively quiet area at the edge of the venue, with "comfort, convenience, and safety" as the core. Set up group style rest chairs to meet the social and rest needs of different age groups; Fresh scented gardenia and wax plum trees are planted around, complemented by tall trees to provide ample shade and create a peaceful and comfortable resting atmosphere.

### 3.2.5 Fitness Activity Area

Some fitness equipment has been set up adjacent to the children's play area for use as a fitness area, achieving separation of movement and stillness throughout the entire design plan.

### 3.2.6 Cultural Exhibition Area

There are various displays of Changzhou's regional culture located within the venue. Set up "industrial heritage features" and design rest areas on the canal bank walkway using retired machine tool parts and textile gears as raw materials; Create a 'Canal Culture Sculpture', using anti-corrosion wood to build a huge square sculpture made entirely of oars.

## 3.3 Artistic Image Design of Functional Areas

The artistic image design of each functional area closely follows the regional culture and functional positioning, achieves overall coordination through a unified design language, and highlights the characteristics of each region.

The sculpture in the shape of a boat oar is made of a combination of steel structure and concrete. The main body of the oar is 6 meters high, and the surface is treated with a wood like texture, paired with LED lights for projection, creating a visual effect when illuminated at night; Set up copper gear shaped rest tables and chairs on the banks of the canal to showcase the characteristics of Changzhou's industrial heritage and enhance cultural depth. The comb pattern on the square floor is made of colored permeable bricks, with dark gray and beige as the main colors, embellished with canal blue, echoing several landscape walls.

The boundary of the open lawn is defined by low flower bands (roses, irises), which have smooth curves and echo the shape of the canal water system; The rest and

communication space in the central square adopts modular design, with a steel structure as the main body and environmentally friendly paint such as yellow and blue sprayed on the surface, making the entire space full of vitality. The scattered leisure long tables on the square are mostly made of anti-corrosion wood material, while the rest tables and chairs placed along the canal corridor are designed with simple industrial gear patterns, echoing Changzhou's industrial heritage culture.

The game area adopts cartoon shapes, such as animal shaped tactile sculptures and windmill water features, made of fiberglass (smooth surface without sharp angles), with bright and soft colors (mainly blue, green, and yellow); The climbing net in the older children's area is made of colored nylon material, paired with a wooden frame, and naturally blends with the surrounding plant landscape. Drawing simple game patterns on the ground pavement enhances interactivity.

The group style rest tables and chairs are designed in a curved shape to facilitate communication among the elderly. The backrest of the seats is carved with simple plum blossom and orchid patterns, conveying the cultural charm of Jiangnan; The tabletop of the chess and card table is made of wear-resistant micro concrete material, with rounded edges. The height of the table legs can be adjusted to meet different height requirements. Set up small landscape stones in the area, engraved with Changzhou dialect proverbs, to enhance the sense of familiarity; The surrounding flower area adopts soft tones (pink, white, purple), with roses and hydrangeas planted to create a warm atmosphere.

## 3.4 Decorative Materials Used in Landscape Design

The selection of decorative materials follows the principles of "environmental

friendliness, durability, functional adaptability, and regional resonance", with priority given to locally available and low-cost materials, while also considering aesthetics and safety.

The floor tiles are made of light gray permeable concrete and dark gray permeable bricks, which have the functions of compression resistance, anti slip, and rainwater infiltration.

The children's play area is paved with EPDM plastic, which has good cushioning performance and reduces fall injuries.

The ground materials of the rest area and cultural experience area are made of anti-corrosion wooden platforms, which provide a comfortable touch and blend with the natural landscape.

The landscape walls and sculptures are made of steel structure, concrete, and imitation wood texture coating. The industrial heritage landscape walls are made of metal parts, and the sculptures are made of stainless steel and fiberglass.

The seat body is made of anti-corrosion wood (seat surface) and stainless steel (bracket), and the elderly friendly seat is equipped with solid wood armrests to enhance comfort;

The signboard adopts a wooden frame and acrylic panel, and the entrance sign is matched with the science popularization sign in brass material to enhance the texture.

### 3.5 Plants used in landscape design

The plant selection is guided by the local varieties of Changzhou, following the three principles of "ecological adaptability, landscape diversity, and maintenance convenience", and constructing a multi-level composite community structure of "trees

shrubs grasses vines". Strictly avoid toxic, prickly, and allergenic varieties in the configuration, while considering functional needs such as shading, soil stabilization, sound insulation, and aromatherapy. At the same time, by combining seasonal changes (flowers, leaves, fruits) with spatial hierarchy, the landscape experience of different functional areas is enhanced.

### 3.5.1 Tree layer

As the basic support of the landscape space, the tree layer takes into account shading, isolation, and landscape identification functions, and selects local varieties that are suitable for the climate of Changzhou:

Sunshade trees: Camphor tree (evergreen broad-leaved, dense branches and leaves, suitable for creating green shade throughout the site, with noise reduction and dust retention ecological functions), Ligustrum lucidum (evergreen, resistant to pruning and easy to shape, suitable for rest areas and dense planting around squares), Luan tree (fallen leaves, yellow flowers in summer, red fruits in autumn, rich seasonal changes, lighting up the visual focus of the entrance square and cultural experience area);

Landscape Trees: Cherry Blossoms (fallen leaves, full of spring flowers, suitable for entrance squares and cultural experience areas, creating iconic spring landscapes), Ginkgo biloba (a small amount embellished in the cultural experience area, with golden autumn leaves, forming seasonal landscape memory points).

### 3.5.2 Shrubs layer

Undertaking the tree layer and ground cover layer, enriching seasonal colors with flowering shrubs, strengthening spatial boundaries with evergreen shrubs, and enhancing ecological stability with functional shrubs:

Flowering shrubs: Purple Wisteria (flowering period from June to September, with bright colors, suitable for children's play areas and rest areas, extending the landscape viewing period), Rose (a common local variety in Changzhou, flowering period from April to October, strong adaptability, planted in flower belts and regional boundaries, forming a continuous landscape belt), Gardenia (flowering period from May to July, with a fresh and elegant aroma, suitable for elderly rest areas, and also has an aromatic healing effect);

Evergreen shrubs: holly (densely branched, can be trimmed into hedge, used for defining functional area boundaries and enclosing landscape clusters), boxwood (compact plant type, suitable for landscape cluster matching, enhancing the sense of hierarchy in the middle space);

### 3.5.3 Ground cover layer

Mainly focusing on low maintenance and high coverage varieties, filling surface gaps, while also considering ecological protection and landscape delicacy:

Evergreen land cover: Ophiopogon japonicus (shade resistant and cold resistant, strong coverage, suitable for under forest and around recreational areas, avoiding surface exposure), Oxalis (long flowering period, wide adaptability, planted in open spaces in various areas, enriching the color of the lower layer);

Fragrant ground cover: lavender, rosemary (a small amount is added to cultural experience areas and elderly friendly rest areas to release soothing fragrances, relieve emotional stress, and enhance healing functions).

## 3.6 Lighting Design

The lighting design adopts the principle of "layered lighting, functional

adaptation, energy-saving and beautiful", combined with the functional needs and artistic image of each area, to create a safe, comfortable and atmospheric nighttime landscape.

Each has multiple lighting sources, and street lights are installed at the entrance plaza and main road, with a spacing of 8-10m,

Set up lawn lights in each functional area channel and arrange them along the trail to avoid dark corners; Landscape architecture adopts floodlights to highlight the shape and details; The corridor of the entrance square adopts hidden light strips to outline the outline;

The interactive devices in the children's play area and the sculptures in the cultural experience area are illuminated with point light sources to enhance fun and visual focus.

Low brightness courtyard lights are installed around the seats in the elderly friendly rest area and cultural experience area, paired with warm white light to create a warm atmosphere; Low landscape lights are installed around the lawn, which are lit up at night to create a soft light spot.

## Conclusion of Chapter 3

1. With the core design concept of "Green Vein Integration City, Cultural Charm Residence", closely following the three major regional genes of Changzhou Canal culture, industrial heritage, and Jiangnan culture, the 12000 square meter irregular site is transformed into a functional, eco-friendly, and culturally distinct composite pocket park.

2. Based on the design methodology system mentioned earlier, the reasonable

division of six functional areas including the entrance square area, cultural center square area, and children's game area has been completed, achieving precise adaptation to diverse needs of all age groups and effective isolation of dynamic and static spaces.

3. Through the artistic translation of regional cultural symbols such as paddle shaped sculptures and comb pattern paving, the artistic image design of each functional area has been completed, forming a visual effect of "overall coordination and distinct zoning characteristics".

4. We strictly adhere to the principles of "environmental protection, durability, and functional compatibility", and have determined the application plans for decorative materials such as permeable concrete, anti-corrosion wood, EPDM plastic, as well as Changzhou native plants such as camphor, crape myrtle, and Ophiopogon japonicus, taking into account practicality, ecology, and low maintenance needs.

5. The lighting design concept of "layered lighting and functional adaptation" is adopted, and the combination of various types of lamps such as street lamps, lawn lamps, and point light sources is used to ensure night time safety and atmosphere creation, ultimately forming a practical and replicable design example for pocket parks in small and medium-sized cities.

# Conclusion

This study aims to address the issues of inefficient spatial utilization, inadequate functional adaptation, and lack of cultural characteristics in the construction of pocket parks in small and medium-sized cities in China, providing theoretical and practical support for the humanized and localized design of pocket parks. Based on the research objectives and tasks, the following core research results have been achieved through literature analysis, empirical research, case extraction, and scheme design:

Through a systematic review of relevant literature on pocket parks both domestically and internationally, as well as modern empirical research and analysis, it has been confirmed that pocket parks, as a key carrier for urban stock space renewal, have irreplaceable value in improving residents' quality of life, enhancing urban microclimate, and strengthening community cohesion. At the same time, it is clear that the design of pocket parks should fully consider the differentiated needs of different groups such as children, teenagers, and the elderly, and solve core problems such as improper spatial layout, single function, poor ecological quality, and lack of cultural characteristics, laying a practical basis for the construction of subsequent design systems.

Through the analysis of the practical experience of constructing pocket parks in China and the existing problems in typical areas such as Zhonglou District in Changzhou, the design directions preferred by different user groups have been clarified: children need safe and interesting game spaces and interactive facilities, teenagers tend to prefer lightweight sports venues, elderly people pay attention to elderly friendly rest and social scenes, and commuters need temporary office and convenient service support. Based on this, further identify and sort out the core

principles system of organizational landscape design applicable to pocket parks in small and medium-sized cities in China, including functional principles centered on diverse needs, ecological principles aimed at low consumption and sustainability, humanistic principles linked by regional culture, and accessibility principles based on universal friendliness.

A systematic landscape design method for pocket parks has been established: in terms of spatial organization, a modular zoning strategy of "separation of movement and stillness+functional aggregation" and a vertical design strategy of "terrain utilization+three-dimensional expansion" have been formed to achieve efficient utilization of limited space; In terms of landscape element design, clarify the refined adaptation path of hard landscape, plant landscape, and water landscape, prioritize the use of local materials and plants, and balance practicality and ecology; In terms of cultural empowerment, three major paths are proposed: historical and cultural implantation, integration of folk activities, and artistic intervention in design, to promote the upgrading of pocket parks from "green spaces" to "cultural carriers".

The importance of various design principles and methods for the construction of pocket parks has been clarified. Based on the principles of functionality, ecology, humanity, and accessibility, general suggestions for organizing landscape design of pocket parks in small and medium-sized cities in China have been proposed: site selection should meet the needs of the "15 minute living circle", functional configuration should cover all age groups, ecological design should integrate sponge city technology, cultural expression should deeply explore regional genes, and management and maintenance should establish a "public participation+long-term management" mechanism.

Based on the above design principles and methods, taking Changzhou City, China as an example, specific suggestions for the landscape design of Pocket Park are proposed: establish the design concept of "integrating green veins and cultural charm", divide the entrance square area, cultural center square area, children's game area and other six functional areas, translate the cultural and industrial heritage characteristics of Changzhou Canal through elements such as boat shaped sculptures and comb pattern paving, and clarify the application schemes of permeable materials, local plants and layered lighting, verifying the practical feasibility of the research results.

## References

[1]Mc Hart, I. L. Neighborhood Public Space: A Study of Small Urban Parks in Philadelphia[R]. Department of Landscape Architecture, University of Pennsylvania,1960s.

[2]Kaplan, R. Evaluation of an Urban Vest-pocket Park. Research Paper,1981,NC-195.

[3]Woolley, H. . Pocket Parks as Community Assets: Safety, Recreation, and Social Cohesion [J]. Urban Design International, 2003,8(2), 89-102.

[4]Jo, H. Distribution Characteristics and Planning Strategies of Pocket Parks in Downtown Seoul [J]. Korean Journal of Landscape Architecture,2012, 40 (4), 53-62.2

[5]Cohen, D. A., et al. Perceived Safety in Urban Pocket Parks: A Cross-Sectional Study [J]. Preventive Medicine, 2014,68(Suppl 1), S34-S39.

[6]Lee, Y. C., & Kim, J. H. Public Attitudes Toward Urban Pocket Parks: Accessibility and Management as Key Determinants of Usage [J]. Sustainability, 2015,7(11), 15623-15640.

[7]Gibson, H., & Smith, K.Fostering Community Interaction Through Pocket Parks: A Qualitative Study of Resident Perceptions [J]. Journal of Urbanism, 2016,9(3), 289-308.

[8]Park, K., & Lee, S. Perceived Accessibility as a Predictor of Pocket Park Usage: An Empirical Study in Urban Areas [J]. Landscape and Urban Planning, 2017,167, 103-112.

[9]Sinha, A., & Roy, S.The Role of Pocket Parks in Enhancing Community Well-being: A Case Study of Urban India [J]. Journal of Green Building, 2018,13(2), 145-160.

[10]Iorpenda, J.Economic, Health, Environmental, and Social Benefits of Pocket Parks: A Systematic Review [J]. International Journal of Environmental Research and Public Health, 2020,17(19), 7123.

[11]Salih, A. H., & Al-Janabi, S. Safety and Social Interaction in Pocket Parks: A Survey of Users in Western Baghdad [J]. Journal of Urban Planning and Development, 2021,147(4), 05021024.

[12]Kerishnan, M., & Hashim, N. User Satisfaction with Pocket Parks in Malaysia: Focus on Safety and Social Interaction [J]. Procedia Environmental Sciences,2021 108, 1245-1252.

[13]Rosso, F., et al.Overcoming the Challenges of Traditional Park Insertion: Pocket Parks as a Strategy for Urban Comfort Enhancement [J]. Sustainable Cities and Society, 2023,101, 104456.

[14]Zhang Chunyang, Guo Enzhang. Planning and Construction of the Miniature Green Belt [J]. Urban Planning, 1989, (04):49-51.

[15]Zhang Wenying. Pocket Parks: Oases to Escape Urban Noise [J]. China Garden, 2007, (04):47-53.

[16]Wang Jin. Research on the Planning and Design of Urban Pocket Parks [D]. Nanjing Forestry University, 2009.

[17]Shen Jun. Integrated Landscape Design of Huzhou Pocket Parks [D]. Nanjing Forestry University, 2011.

[18]Ma Jie. Research on the Design of Hangzhou Pocket Parks [D]. Zhejiang University, 2012.

[19]Hu Yue. Design and Planning of a Miniature Park in Beijing's Shichahai Area [D]. Tsinghua University, 2015.

[20]Deng Hongyu. A Study on the Design of Urban Pocket Parks Based on Horticultural Therapy [D]. Southwest University of Science and Technology, 2018.

[21]Lan Jie. Application Practice of Sponge City-style Renovation of Pocket Parks [J]. Jushi, 2020, (34):161-162.

[22]Jiang Baocheng. A Study on Pocket Park Design Under the Urban Dual Restoration Concept [D]. Tianjin Normal University, 2021.

[23]Yue Xiaole, Zhai Fushun, Bi Lei. Landscape Design of Arcadia Community Pocket Park Based on the Healing Landscape Concept [J]. Green Technology, 2022,24(07):5-9+13.

**APPENDIX A. Visual material for the text**



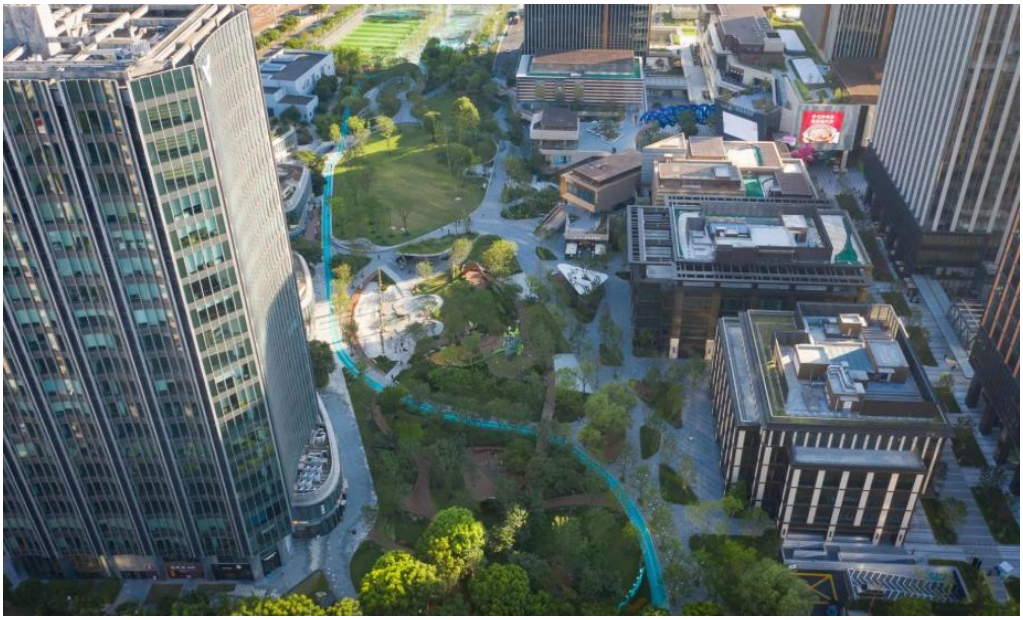

Іл.А.1.2.1.1The current state of Xinhua Road Park. In pursuit of 'making the most of every available space' for rapid construction, the subsequent management has been inadequate and fails to meet user needs.

https://mp.weixin.qq.com/s/fZ7u5x3sMnUgtbiteMfixg



Iл.A.1.2.6.1Pere Park. The park is surrounded by walls on three sides and opens to the street on one side. It covers an area of only 390 square meters.

经典回顾 | 家门口、城市中可圈可点的口袋公园 – mooool 木藕设计网



Iл.A.2.1.1.1Shanghai Green Carpet Park. It maximizes the use of limited space to meet the needs of different groups and scenarios.

绿毯公园 / 大小景观 – mooool 木藕设计网



Iл.A.2.1.2.1Garden at the foot of Dali Mountain.Dig deep into local plant resources [生命的四季：一座自然主义花园的动态美学实践 | 大理山下花园 / 叙野景观 Narrascape – mooool 木藕设计网]



Iл.A.2.1.3.1The ancient city is restructured with an overall plan, and the cultural heritage is perfectly integrated with modern life [让文化遗产“活起来”：芜湖古城城市更新景观环境设计 / 水石设计 – mooool 木藕设计网]




Iл.A.2.1.4.1Dongqiao Village in Wanzhou District, Chongqing, is the first aging-friendly renovation project.



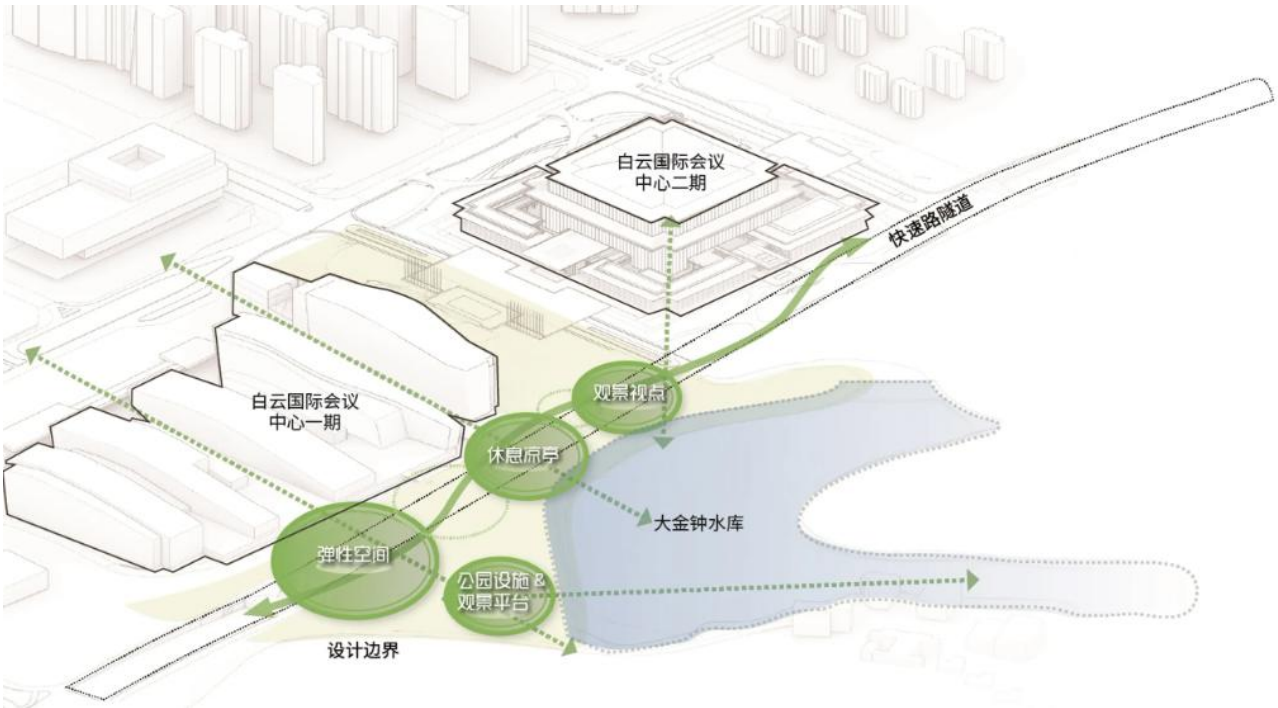
Iл.A.2.1.4.2Barrier-free handrails are installed throughout the area to ensure the safety of elderly people when moving around.

重庆首个适老化改造项目万州区东桥村 / 道合设计 – mooool 木藕设计网



Iл.A.2.1.4.3Chongqing Longhu Yinan Apartment Rehabilitation Garden. The specially elevated planting bed allows wheelchair-bound seniors to easily engage in gardening activities.

重庆龙湖颐年公寓康复花园_Longfor Yinian Apartment Rehabilitation Garden / GVL_怡境国际设计集团+张玲博士_–mooool木藕设计网




Iл.A.2.2.1.1Landscape design of Dajinzhong Park.



Iл.A.2.2.1.2The Golden Bell Park. The entrance's Sunrise Square features an oval grass-staircase theater, designed to accommodate outdoor performances at the International Conference Center while also serving the public's daily needs.



Іл.A.2.2.1.3The Grand Bell Park features a rest pavilion inspired by moonlight reflections. Its lightweight circular design, framed by native plants, serves as a sun-shelter and rain-protected spot while offering panoramic views of the auditorium's night scenery.

缝合城市与自然山体的绿色廊道：大金钟公园景观设计 / 华南理工大学建筑设计研究院有限公司 – mooool 木藕设计网



Іл.A.2.2.1.4Sandpit in the Children's Area

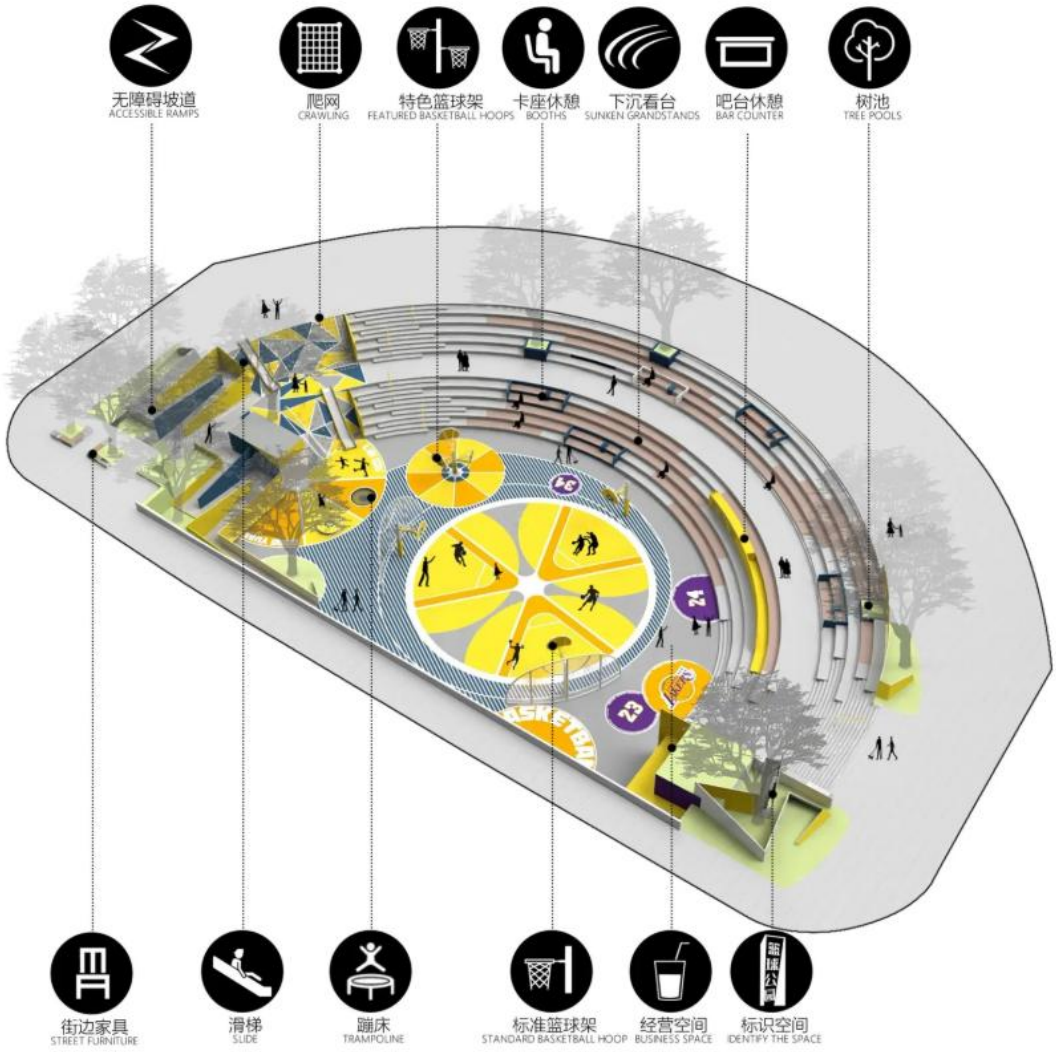


Іл.A.2.2.1.5Climbing net for children



Іл.A.2.2.1.5Plastic floor in children's area

[韧性的城市公共空间框架 | 东莞松山湖中心区通湖礼廊二期改造提升项目 / 本色营造 – mooool 木藕设计网]



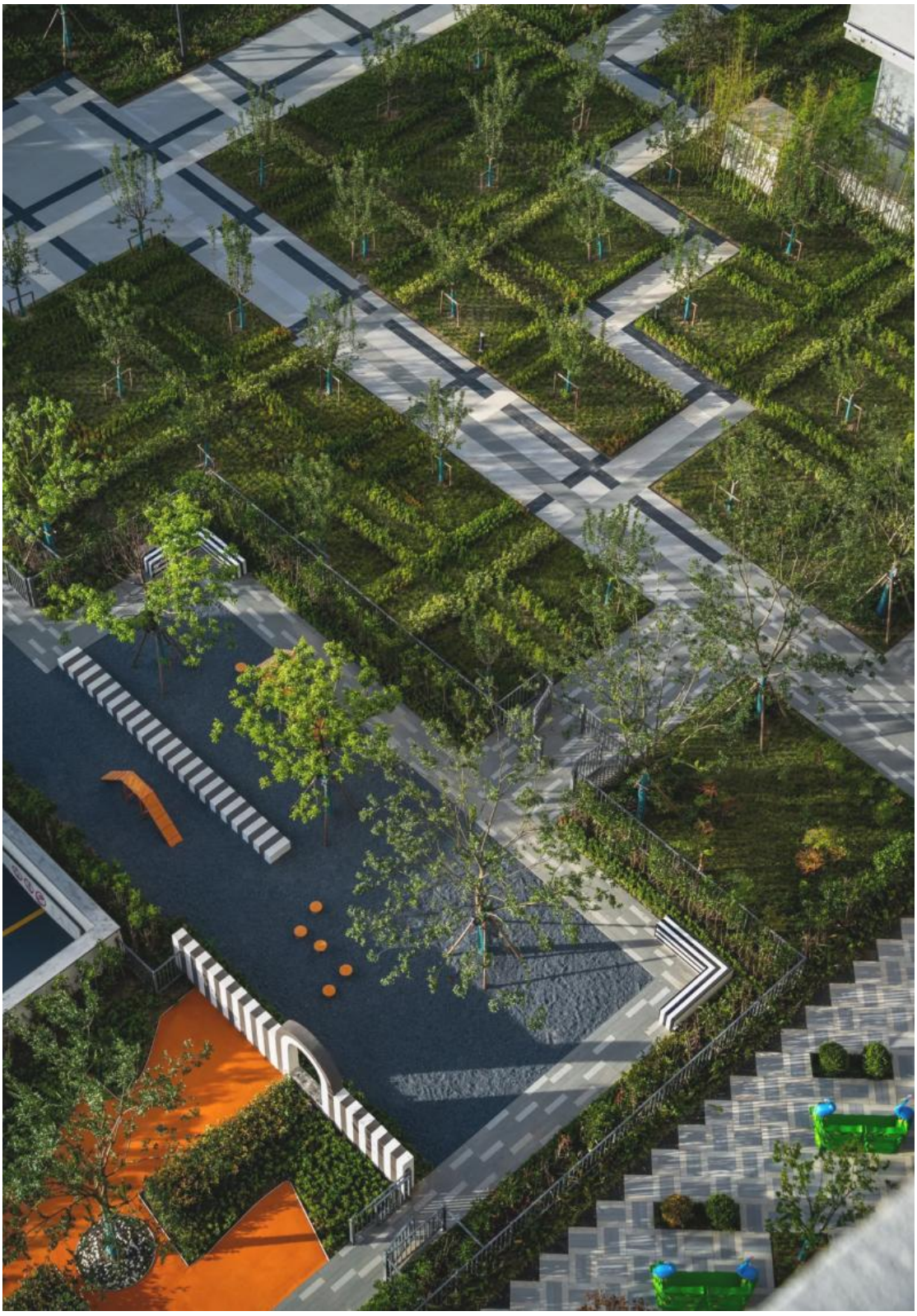

Іл.A.2.2.1.6Sinking space

[城市负空间的激活—JU 橘•篮球公园 / HID 翰地景观 – mooool 木藕设计网]



Iл.A.2.2.1.7The greenery on both sides serves as a buffer against the oppressive facade of the tower, gradually guiding pedestrians away from the urban environment and into the interior of the site.

轻花园，深圳华润万象府屋顶花园 / 大小景观 – mooool 木藕设计网



Iл.A.2.3.1.1This pattern language combines the hard landscape and the soft landscape into a continuous field, forming a deliberately organized natural form

[莘至城公寓景观设计 / BAM 百安木 – mooool 木藕设计网]




Iл.A.2.3.1.2Floor paving in the children's area

一场社区型儿童乐园设计的革新丨格格屋教育乐园 / MBDI 麦社 – mooool 木藕设计网



Iл.A.2.3.1.3Stone path in the shade

青浦西岑培雅南路绿带——藏在“涟漪”下的景观生态科技，上海 / UDG 上海联创设计 – mooool 木藕设计网



Iл.A.2.3.1.4Peel Plaza is both a sculpture and a public urban terrace, with its wooden platform featuring a 'peeling' curled texture.

不一样的装置，用创意和互动激活空间 – mooool 木藕设计网



Iл.A.2.3.1.5The intelligent modular seat can provide temporary office convenience for the surrounding people

青浦西岑培雅南路绿带——藏在“涟漪”下的景观生态科技，上海 / UDG 上海联创设计 – mooool 木藕设计网



Iл.A.2.3.2.1Based on the hard landscape space, the plant is the main design carrier to create different temperament and atmosphere space, and bring a variety of natural scenes into life

广州·鹏瑞 1 号景观花园营造，以植物链接空间 / 广亩景观 – mooool 木藕设计网



Iл.A.2.3.3.1Urban pedestrian street landscape design in Ukraine

乌克兰城市步行街景观设计 / FILIMONOV & KASHIRINA architects – mooool 木藕设计网



Іл.A.2.4.1.1The dilapidated steel structure is respected and preserved here, fully demonstrating its unique industrial historical identity and the beauty of its ruins https://mp.weixin.qq.com/s/ZkM8Xs2h3vkV5MR8E9__Zw



Iл.A.2.4.1.2The white-walled, black-tiled Soviet-style aesthetics are reimagined by drawing inspiration from classical garden design techniques and materials. Elements like moon-shaped archways, hexagonal lattice windows, and tiled flooring are deconstructed and reassembled, with a new Soviet-style pavilion added beneath the preserved ginkgo trees.

https://mp.weixin.qq.com/s/Yb6Air-UMUwVKoau60E-Dw



Iл.A.2.4.3.1The design concept continues the historical context of Suhe industry

长宁路上这座口袋公园，优秀！



Іл.A.2.4.3.2The park features interactive art installations, graffiti walls, and temporary exhibitions that blend industrial textures with modern art.

文化中国行丨破茧成蝶 798：一座工业遗址的文化崛起

# APPENDIX B. Tables, diagrams

| Problems faced by citizens when using pocket parks | |
|---|---|
| Spatial Layout and Accessibility | - Blind site selection, failing to effectively align with population density, age structure, and behavioral flow of surrounding communities- Located in traffic roundabouts, under overpasses, etc., with poor accessibility, severe pollution, and safety hazards- Irrational internal circulation design (hidden entrances, circuitous paths, rigid connection of functional blocks) |
| Functional Configuration | - Single-function and "homogeneous parks", lacking consideration for the needs of specific groups such as children, teenagers, and the elderly- Functional area division fails to consider compatibility and interference, leading to spatial use conflicts |
| Ecological Quality | - Single plant configuration, lacking multi-layered composite communities of trees, shrubs, and grasses, with insignificant seasonal changes<br>- Overemphasizing landscape over ecology, extensive use of hard paving and exotic plants, neglecting native plants, weakening ecosystem service functions |
| Service Facilities and Maintenance Management | - Insufficient supporting facilities such as seating, sunshade and rain shelter, night lighting, trash cans, and barrier-free facilities- After completion, "emphasizing construction over management", lacking daily cleaning, facility repair, and plant maintenance, leading to environmental decay |
| Cultural Characteristics | - Design lacks cultural depth and local features, falling into the trap of "symbolization" and "labeling"- Failing to integrate local historical context, folk customs, and industrial characteristics, resulting in weak regional identity |
| Public Participation | - Lack of public participation mechanisms throughout planning, design, and management, with citizens' needs not fully incorporated<br>- Lack of community co-governance and co-management mechanisms, citizens passively accept, and community cohesion cultivation is insufficient |

Табл.Б.1.2.1 Based on modern empirical research, this paper analyzes the problems faced by citizens when using pocket parks

| The core principles of pocket park landscape design | |
|---|---|
| Functional Principle | - Age-specific functional adaptation: Configure exclusive facilities for children, teenagers, the elderly, commuters, etc.- Time-period functional compatibility: Adjust spatial functions according to different time periods (morning, afternoon, evening) to extend service hours- Conflicting function isolation: Separate dynamic and static areas with plants, scenery walls, etc., to avoid usage interference |
| Ecological Principle | - Priority configuration of native plants: Select native plants adapted to the local climate to build multi-layered composite communities of trees, shrubs, and grasses<br>- Integration of sponge city functions into design: Adopt permeable pavement, grassed swales, rain gardens and other sponge technologies to realize rainwater infiltration, retention, storage and utilization<br>- Low-intervention and sustainable maintenance: Reduce high-energy-consuming landscape elements, reserve community co-governance gardening areas to lower maintenance costs |
| Humanistic Principle | - Translation of local cultural symbols: Extract local canal, industrial, intangible cultural heritage and other cultural elements and integrate them into scenery walls, pavements and facility shapes- Reservation and guidance of social spaces: Set up combinable seats, small activity venues, and retain informal social spaces to promote neighborhood interaction |
| Accessibility Principle | - Optimization of external accessibility: Locate near densely populated areas, equip with safe crossing facilities, and ensure entrances are prominent and barrier-free- Barrier-free internal circulation: The circulation is concise and clear, the width of main and secondary roads meets standards, the ground is flat and non-slip, and ramps and handrails are provided at elevation changes- Accessibility adaptation of facilities: Facilities such as seats, fitness equipment, and lighting consider the needs of special groups to ensure friendly use for all people |

Табл.Б.2.1.1 The core principles of pocket park landscape design

| Spatial organization strategy dimension | |
|---|---|
| Spatial Zoning | - Core Functional Zone:<br>- Comprehensive Activity Module: Accounting for 30%-40%, including open lawns, activity squares, and supporting service facilities, realizing functional conversion by time periods<br>- Core Rest Module: Accounting for 15%-20%, using trees to create shade, equipped with age-friendly seats, landscape pergolas, and reading corners, with soft separation from the activity area |
| | - Transition Functional Zone:<br>- Semi-private Interaction Module: Set up clustered rest units, forming semi-enclosed spaces through scenery walls, flower racks, etc.<br>- Ecological Buffer Module: Layout rain gardens, grassed swales, etc., with both sponge function and nature education function |
| | - Edge Functional Zone:<br>- Special Function Module: Set up children's play areas (including slides, sandpits, climbing nets, etc.), far from main roads, with soft paving to ensure safety<br>- Boundary Isolation Module: Set up green isolation belts (tall trees + dense shrubs + low walls) to isolate external interference |
| Vertical Design | - Topographic Micro-modification:<br>- Sunken Space: Set up sunken sites in core rest areas or semi-private interaction areas for rest and socializing, with rainwater collection function<br>- Elevated Space: Set up 80-150cm elevated platforms in children's play areas or viewing nodes, with the upper layer for activities/viewing and the lower layer for parking, storage, or rest |
| | - Three-dimensional Landscape Creation:<br>- Mid-level Landscape: Set up 1.2-1.5m high hedges to separate spaces, build landscape flower racks with climbing plants to expand rest space<br>- High-altitude Landscape: Use building facades for vertical greening and facility roofs for roof gardens to increase green area and weaken the sense of boundary |

Табл.Б.2.2.1Spatial organization strategy dimension

| Plant Configuration Table | | | |
|---|---|---|---|
| arborescent stratum |  | Camphor Tree | Evergreen arbor, good shading effect, stable growth, suitable for most urban environments, can continuously provide shade in summer |
| |  | Glossy Privet | Evergreen arbor, strong adaptability, stable growth, neat tree shape, with both greening and shading functions, low maintenance cost |
| |  | Goldenrain Tree | Deciduous arbor, rich seasonal changes, yellow flowers in summer, red fruits in autumn, high ornamental value |
| |  | Weeping Willow | Branches hang down heavily, elegant posture, suitable for planting in waterfront areas, can enhance spatial transparency and dynamic beauty |

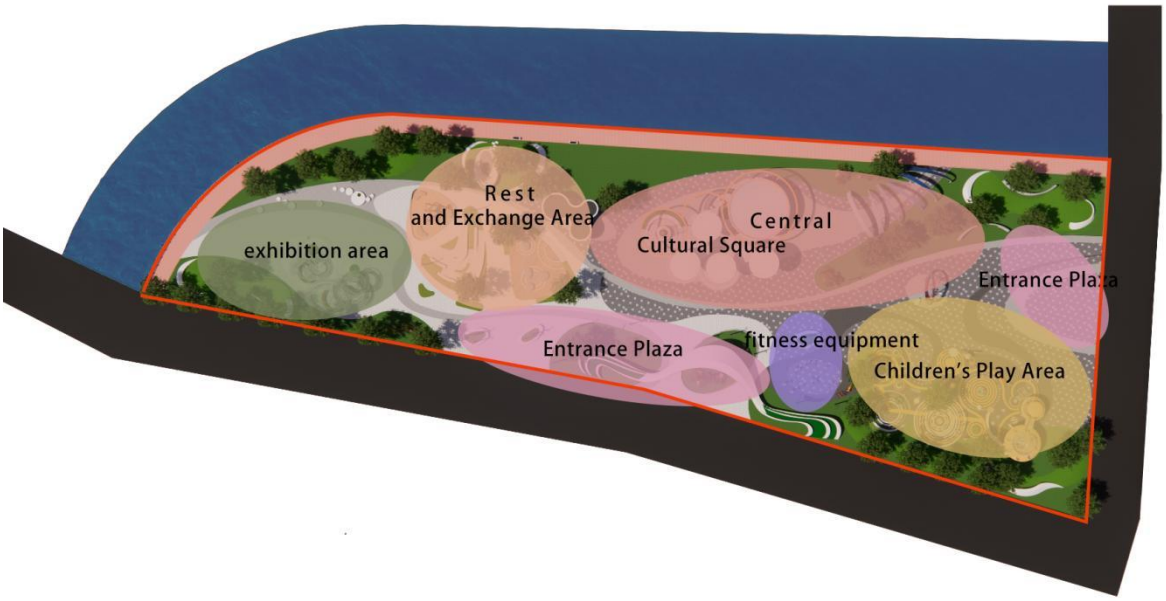
| | | | |
|---|---|---|---|
| shrub stratum |  | Crape Myrtle | Blooms in summer, long flowering period, rich flower colors (red, pink, white, etc.), tolerant to barrenness and pruning, suitable for various scenes |
| |  | Rose of Sharon | Blooms in summer, bright flower colors, tolerant to barrenness, strong adaptability, tolerant to pruning, can create diverse landscape forms |
| |  | Holly | Evergreen shrub, dense branches and leaves, tolerant to pruning, can be pruned into hedges for spatial division, maintains greening effect all year round |
| ground storey |  | Ophiopogon japonicus | Good shade tolerance, strong coverage, vigorous growth, suitable for understory planting, no frequent maintenance required |
| |  | Oxalis | Shade-tolerant, fast coverage, small and beautiful leaves, can quickly cover bare land, improve landscape neatness |
| |  | Iris | Moisture-tolerant, suitable for planting in waterfront or humid areas, unique flower shape, elegant flower color, with both ecological and ornamental value |
| |  | Zoysia japonica | Strong trampling resistance, developed root system, robust growth, suitable for planting around game areas, can withstand high-frequency activity crushing |

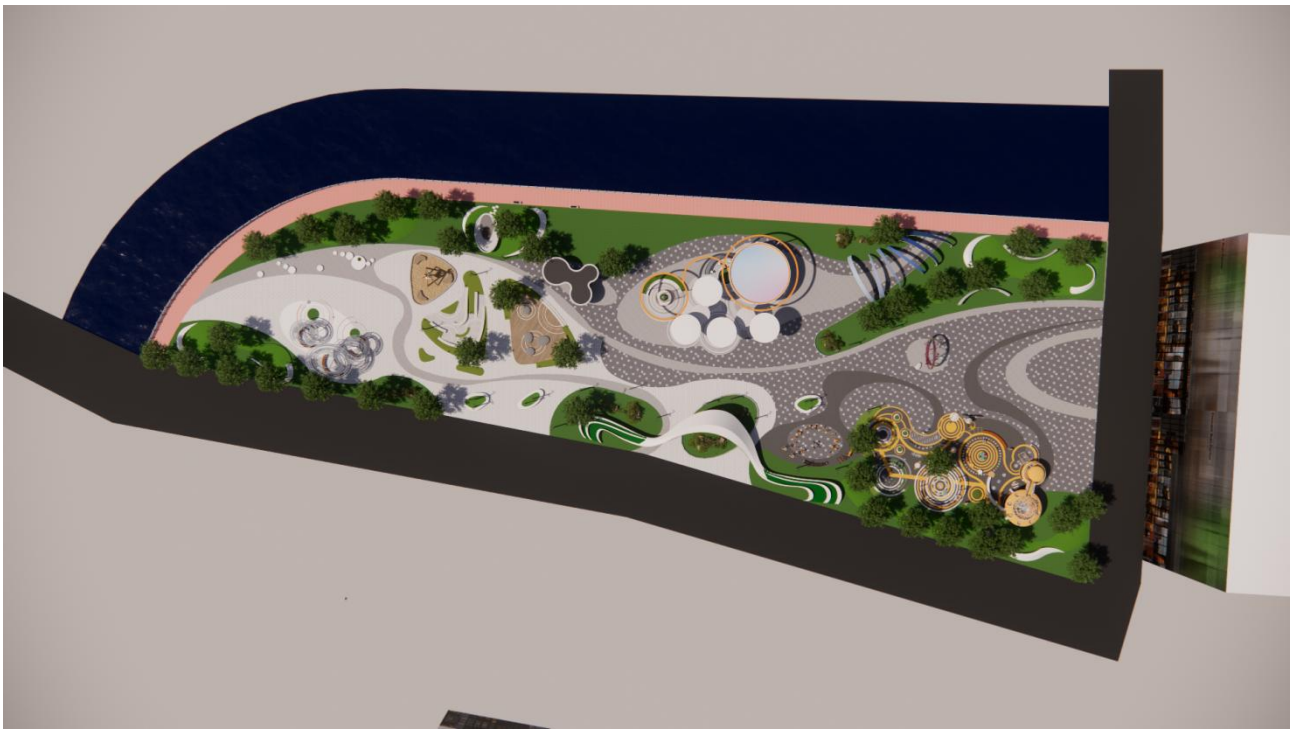
Табл.Б.2.3.1Plant Configuration Table

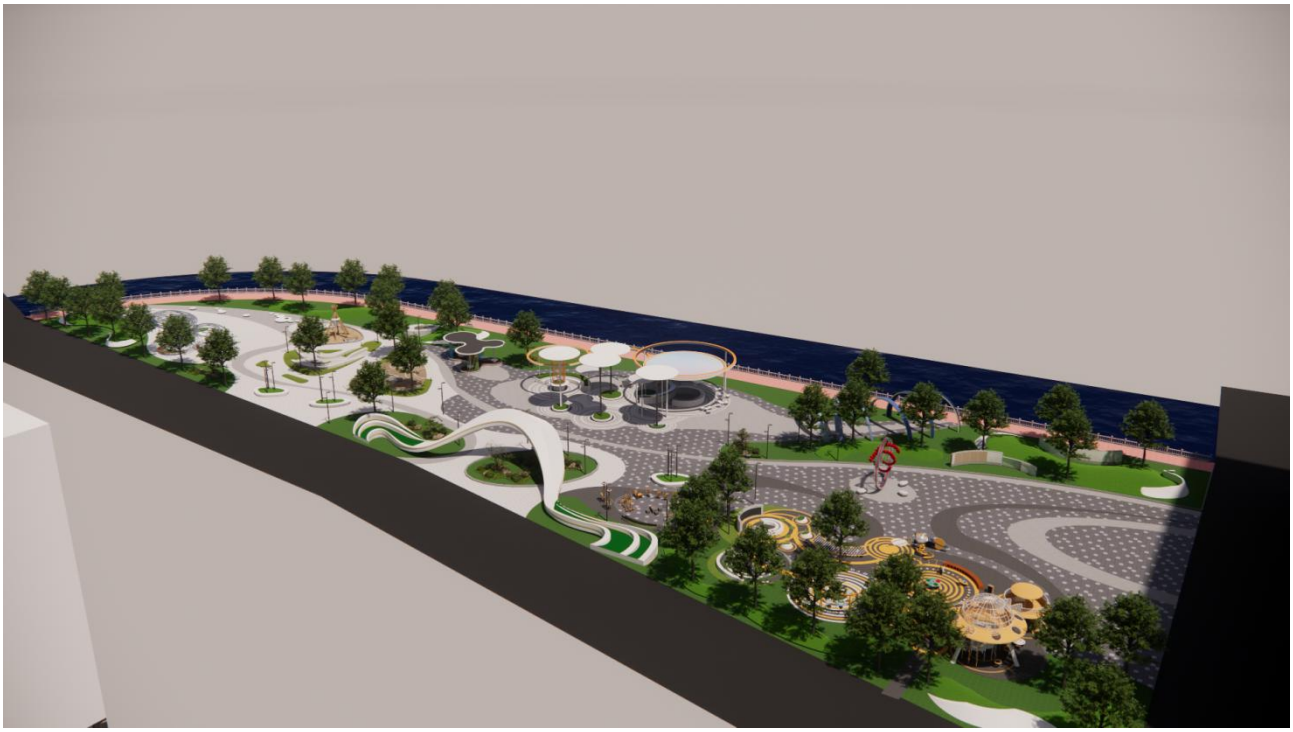
| Cultural Empowerment Design Approach | |
|---|---|
| Historical Culture Implantation | - Element Extraction: Focus on regional historical events, traditional industries, architectural styles, celebrity anecdotes, etc. For example, industrial heritage cities extract factory components, historical and cultural cities refine traditional architectural symbols, and celebrity hometowns design around celebrity stories |
| | - Element Transformation: Realize cultural implementation through hard landscapes (paving, scenery walls, facilities), plant configuration, and signage systems, such as converting historical symbols into paving patterns and selecting native plants related to historical scenes |
| | - Spatial Narrative: Create a complete cultural context for citizens to experience while walking through "scene reconstruction + circulation guidance", such as constructing narrative circulations with themes like old Chengdu life and canal transport culture |
| Folk Activity Integration | - Space Reservation: Set up "fixed activity venues + flexible activity areas" to meet the needs of small-scale regular activities (such as intangible cultural heritage handicraft classes, pingtan performances) and medium-scale festival activities (such as New Year's goods markets, folk performances) |
| | - Activity Carrier Construction: Design exclusive landscape facilities and interactive scenes based on folk characteristics, such as Spring Festival couplet writing desks, lantern hanging racks, shared drying platforms, and flower market racks, to reduce the threshold for activity organization and enhance citizens' participation |
| Art Intervention Design | - Public Art Installations: Combine site functions and regional characteristics to create installations with both ornamental and interactive features, such as interesting interactive sculptures for children, immersive industrial art landscapes, and locomotive art installations |
| | - Creative Landscape Design: Artistically process conventional elements such as paving, plants, and facilities to enhance the aesthetic value and uniqueness of the space |
| | - Community Participatory Art: Encourage citizens to participate in art creation and space co-construction to enhance emotional identity and community cohesion |

Табл.Б.2.4.1Cultural Empowerment Design Approach

# APPENDIX C. Project proposal












SPORTS
HAPPY









