

# Pocket Park Design Based on the Background of Urban Micro-renewal: A Case Study of the Landscape Design of “Qingshuitang” Pocket Park in Macheng Economic Development Zone

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**Abstract** This paper focuses on the design of pocket parks against the background of urban micro-renewal. Taking the “Qingshuitang” Pocket Park in Macheng Economic Development Zone as an example, it explores how to activate idle urban spaces through small-scale and incremental transformation. Based on the practical experience of Macheng City’s “San Chang Yi Zhuang Yi Yuan” (three plazas, one parking lot, one park) micro-renewal project, this paper analyzes the design strategies of pocket parks in terms of functional integration, cultural integration, and community participation, so as to provide references for similar projects.

**Keywords** Urban micro-renewal, Pocket park, Landscape design

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With the acceleration of urbanization, urban spatial resources are becoming increasingly scarce, and the traditional large-scale demolition and renovation model is no longer able to meet residents’ demand for a quality of life. As a “light intervention, big change” renewal method, urban micro renewal emphasizes optimizing urban space through small-scale and gradual transformation<sup>[1]</sup>. As an important carrier of micro renewal, pocket parks have significant advantages in revitalizing idle land, improving public services, and enhancing urban vitality<sup>[2]</sup>. As the core city of the revolutionary old area in the Dabie Mountains, Macheng has actively promoted urban micro renewal practices in recent years. Its “three plazas, one parking lot, one park” project integrates functions such as parking lots, fitness centers, and pocket parks, forming the urban development framework of the “Macheng Fifth Ring Road”<sup>[3]</sup>. Taking the “Qingshuitang” Pocket Park in this project as an example, its design strategy and practical effectiveness are explored.

## 1 Site overview

The site is located in the western part of Xingfa Village, Jingguang Avenue, Macheng Economic Development Zone. The design site features a hilly terrain that is generally high in the south and east, low in the north and west. The terrain is relatively sunken compared to the surrounding area. The south side is adjacent to the Second Kindergarten of Macheng Economic Development Zone, and the west side is a green space to be developed. The site retains a clear water pond from the original demolished village. The total area of the design site is approximately 3,500 m<sup>2</sup>. The plot type is a public activity green

space in the community, mainly serving nearby residents. The function should not only meet the ecological and landscape requirements, but also serve as a gathering space, activity space, and recreational space.

## 2 Planning principles and objectives

### 2.1 Planning principles

**2.1.1** The principle of combining tourism with culture. In the overall layout and specific planning of scenic spots, cultural concepts should be highlighted, especially local culture and characteristics. Various scenic spots should be arranged with different themes to create an environment and enhance taste with culture. Park masterpiece is formed, and park personality is created.

**2.1.2** The principle of combining static and dynamic. In the planning of project attractions, the clever combination of sightseeing and interactive tourism activities enhances the participation and fun of visitors, and a park with modern characteristics is built.

**2.1.3** The principle of combining ecology and efficiency. A good ecological environment is a prerequisite for the sustainable development of parks. The planning and construction of parks should prioritize ecological protection and strictly protect the ecological environment of the park. It mainly focuses on plant landscaping. While meeting the requirements of ecological environment and landscape design, attention should be paid to the combination and introduction of multiple plants to create an ecological garden landscape, striving to achieve the “five unifications” of environment and ecology, function and landscape, commonality and indi-

viduality, biodiversity and multi-layer planting, and economy and practicality. Thus it creates a beautiful and ecologically harmonious urban green new space, and maximizes the social and economic benefits of park planning and construction.

**2.1.4** The principle of combining tradition and modernity. Adopting traditional Chinese gardening techniques and combining with modern gardening requirements, it strives for novelty, making the park both traditional and contemporary, more typical than nature, reflecting real social life, and evoking more associations, inspirations, reflections, and explorations for visitors. It emphasizes humanized design and strives to reflect scientificity, locality, ecology, and economy, making the park truly a place for people to relax and entertain.

**2.1.5** The principle of combining parks with communities. Based on the location and resource conditions, in line with reality, efforts should be made to minimize the difficulty of implementation, and the planning of the park should be closely linked to the higher-level planning and functions of the community. Different types of garden elements should be integrated into the overall landscape of the park and blended with the urban landscape. It should focus on factors such as the radiation area and service population of the park, and prioritize the layout of areas with insufficient coverage of park green space service radius. During park construction, barrier free facilities and supporting facilities such as leisure seats, garbage bins, fitness equipment, etc. should be set up according to the needs of different groups, in order to improve the quality of park green space and community service functions<sup>[4]</sup>.

## 2.2 Planning objectives

The purpose of this project is to build a residential park on the original site. Through reasonable landscape planning and design, it increases green space and residential activity areas, showcases a space that integrates ecology, culture, leisure, fitness, and social activities, and creates a first-class community pocket park. On the basis of respecting the higher-level planning, it enriches the functional use of the site, improves the functional zoning, landscape structure, and transportation system, and plans the soft and hard landscapes reasonably to give life and vitality to the site.

**2.2.1 Functional synergy.** The venue integrates multiple functions such as parking, fitness, and cultural exhibitions, to enhance land use efficiency.

**2.2.2 Suitable for aging and youthfulness.** Activity facilities for all age groups are set up, such as children's play slides, sand pits, elderly fitness equipment, etc.<sup>[5]</sup>.

**2.2.3 Ecological sustainability.** Local plants, rain gardens and other ecological technologies are adopted to achieve low-carbon development<sup>[6]</sup>.

## 3 Planning themes and conceptual ideas

### 3.1 Planning themes

The theme of this plan is "planting trees and clearing pond, nesting and attracting birds". It revolves around the predecessor of the community, Qingshuitang Village, "Qingshuitang". Based on the current resource characteristics of the community and the main direction and goals of its future development, the nature of the park is determined as a small idealized ecological habitat, a memorial park that travels through the past, present, and future of "Qingshuitang", a community park that integrates ecology, culture, leisure, fitness, and socializing.

### 3.2 Conceptual ideas

The design of this plan combines the current land use situation, and the remaining pond in the site—"Qingshuitang" is selected as the starting point for the overall design. It is like a gear of time, recording the past, present, and future of the site. It hopes to design functional needs that meet the user population, and create an ideal park that transcends the past, present, and future of the site by excavating and preserving site memory and local characteristics of ecological composition. The vitality of the park is reproduced through ecologically sustainable means and methods, and plants are transformed

with modern expression techniques, to make it closer to life, meet functional needs, evoke memories of indigenous people, miss its past, cherish its present, and create its future together (Fig.1).

## 4 Functional zone division and design strategy

In the design, there are mainly 7 functional zones, namely sports & fitness area, canopy strolling zone, children's activity area, central landscape area, pond landscape zone, flower landscape area, and vertical landscape zone. The activity functions vary between functional zones to meet the different activity needs of different groups of people (Fig.2-3).

### 4.1 Flower landscape area

The main road of the residential area leads to the main entrance and exit area of the park, and what catches the eye is a vibrant four-season flower bed. Spring: *Tulipa* × *gesneriana* L., *Oxalis corymbosa* DC., *Rhododendron simsii* Planch., *Prunus* subg. *Cerasus* sp., *Malus halliana* Koehne, *Prunus persica* 'Duplex'; summer: *Rosa chinensis* Jacq., *Paeonia* × *suffruticosa* Andrews, *Coreopsis grandiflora* Hogg ex Sweet, *Lagerstroemia indica* L., *Prunus cerasifera* 'Atropurpurea', *Hibiscus syriacus* L.; autumn: *Chrysanthemum* × *morifolium* Ramat, *R. chinensis* Jacq., *Punica granatum* L., *Prunus serrulata* var. *lannesiana* (Carri.) Makino, *Berberis thunbergii* 'Atropurpurea', *Acer palmatum* 'Atropurpureum'; winter: *Ophiopogon japonicus* (L. f.) Ker Gawl., *Orychophragmus violaceus* (L.) O. E. Schulz, *Chimonanthus praecox* (L.) Link.

### 4.2 Central landscape area

The steps leading to the central square adopt a rhythmic and staggered form, echoing the double curved corridor, and forming a unique landscape. The corridor adopts new materials of steel and wood, and combines with a local granite base in Macheng, showcasing regional culture. In the plant selection of the central square, the city flower *R. simsii* Planch. and the local tree species *Zelkova serrata* (Thunb.) Makino in Macheng are planted. Surrounding residents can engage in entertainment and leisure activities such as square dancing and shade, showcasing a strong sense of life.

### 4.3 Children's activity area

Plastic soft paving materials are used to create safe and bright climbing facilities, and it is a play fortress for children, inspiring their exploration potential and cultivating their brave personality. At the same time, new materials such

as steel and wood are used to create children's double layered slides, adventure sand pits, and other entertainment facilities, giving the venue a new lease on life and embodying aspirations and hopes for the next generation.

### 4.4 Sports & fitness area

The original basketball court area is renovated, and blue rubber is used to express it. The court is surrounded by a red rubber track, which echoes the clear water pond and children's activity area, symbolizing vitality and life, and providing a space for sports and communication for surrounding residents. The blue light strip is also used to surround the court, which not only serves as a lighting function, but also creates a basketball court at night that is as blue and mysterious as stars. Grandstand seats are designed near the main road of the community by utilizing the height difference of the field, which can not only avoid mutual interference between the stadium and the community road, but also provide a place for rest and communication after sports.

### 4.5 Canopy strolling zone

In this node area, large trees provide shade, and it is embellished with the Huanggangyan steps. Stone seats are set up to make reasonable use of this space. Green coverage is increased, to meet the walking needs of surrounding residents, and also provide a quiet leisure space for residents.

### 4.6 Pond landscape zone

When shaping the landscape space of the clear water pond, the artificial hard vertical revetment is transformed, and natural revetment is built with block stones and pebbles. A hydrophilic platform is set up to allow tourists to engage in hydrophilic activities, and modern technology is used to present it in a brand new appearance. The "tree" lamps, ornaments, and chairs, like a site ruins, commemorate these spiritually rich lives and the beautiful times that have passed. Moreover, it reminds tourists to protect the ecology and safeguard their common home. A small bridge spans over the narrow pond surface, showcasing small bridge, flowing water and homes, and some waterfront platforms are extended from the revetment, providing visitors with a resting space. A resting observation pavilion is built on the water surface, where tourists can check-in and take photos.

### 4.7 Vertical landscape zone

Using new materials and technologies, a vertical landscape wall adjacent to the kindergarten on the south side of the park is created.





Note: 1. Characteristic Staircase Seats; 2. Rubber Circular Track; 3. Four-Season Flower Bed; 4. Rubber Basketball Court; 5. Physical Fitness Platform; 6. Graffiti-style Landscape Wall; 7. Vertical Greening Landscape Wall; 8. Climbing Vine Leisure Pergola; 9. Spiral Slide; 10. Kid-Friendly Themed Sand Pit Area; 11. Children's Climbing Net Structure; 12. Children's Playground Restful Tree Seating; 13. Ornamental Landscape Wooden Bridge; 14. Waterfront Revetment Platform; 15. Waterfront Landscape Pavilion; 16. Ecological Clear Water Pond; 17. Central Square; 18. Curved Restful Pergola; 19. Canopy Promenade.

Fig.1 Plane



Fig.2 Division of functional area



Fig.3 Bird's-eye view effect

Complemented by flower stands, climbing plants such as *Wisteria sinensis* (Sims) Sweet and climbing roses are planted, enriching the three-dimensional landscape effect. It likes a time tunnel leading from the past to the future.

## 5 Plant and specialized design

### 5.1 Green plant design

The creation of plant landscape clusters should consider the introduction of plant species and the combination of trees, shrubs, and herbaceous plants according to local conditions. In terms of trees, local Hubei tree species such as *Koelreuteria paniculata* Laxm., *Broussonetia papyrifera* (L.) L'Hér. ex Vent., and *Camphora officinarum* Nees ex Wall are selected, emphasizing the combination of economic benefits and plant aesthetics. In terms of shrubs, *R. simsii* Planch., *Ligustrum quihoui* Carr., *Camellia japonica* L., and other plants with colored leaves are selected to achieve color matching. Herbal plants such as *Reineckea carnea* (Andrews) Kunth, *Viola tricolor* L., and *O. japonicus* (L. f.) Ker Gawl. suitable for planting in Hubei are selected to enhance landscape richness by combining economic benefits and plant color.

### 5.2 Specialized design

**5.2.1 Facility and accessory design.** Rest facilities: chairs, corridors, and other rest facilities should comply with ergonomic requirements and be arranged in places with sufficient sunlight or good shade. Children's playground facilities: according to the needs and characteristics of children of different age groups, facilities such as slides, swings, climbing frames, etc. are chosen. The surface materials should be soft and environmentally friendly. Fitness facilities: the selection of equipment for fitness venues should consider multiple types, and the ground should be made of anti slip and shock-absorbing materials. Landscape sketches: distinctive sculptures, water features, flower boxes and other landscape sketches are designed to reflect the theme of the park, and enhance the artistic atmosphere and attractiveness of the park.

**5.2.2 Safe and barrier free design.** Safety design: activity venues and facilities should comply with safety standards, and protective facilities should be installed in sports and fitness venues, children's activity areas, etc.; adequate lighting facilities should be provided to avoid blind spots and ensure nighttime safety. Barrier free design: barrier free passages should be set up with width and slope that meet regulatory requirements, and barrier free facilities should be installed at rest area.

## 6 Conclusions and prospects

Although the existing large number of old communities in the city appear dilapidated in appearance, they are actually full of vitality. Their streets and courtyards are of pleasant scale, with high living convenience and strong spatial vitality. Compared to newly built high-rise residential areas, neighborhood relationships are more harmonious. Therefore, adapting old communities to the needs of modern lifestyles through rational design and renewal has become a key proposition.

From the practice of community micro-renewal, it is recognized that the value of pocket parks is particularly prominent: it is characterized by “flexibility and diversity, not limited by area and function”, and has become the core path to reshape the public environment of communities. This update mode not only continues the logic of “inserting every opportunity”, and parks grow in the fragmented spaces of the community; but also emphasizes multi-party collaboration, with residents’ proposals as the starting point, designers leading the design, and communities participating in the creation. Meanwhile,

details design that is suitable for aging and activity is embedded. By incorporating public space modules such as community gardening, rehabilitation and fitness, and children’s playgrounds that meet the needs of the times, the iteration of community public activity spaces is completed. Of particular importance is that pocket park has incorporated a mechanism for residents to jointly maintain and construct on top of its original advantages: it is no longer an isolated landscape, but has become a “communication center” and “emotional bond” for the community. It not only activates community vitality and deepens neighborhood relationships, but also cultivates more resilient “vitality nodes” for the city by upgrading public spaces.

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(Continued from P7)

shade-tolerant tree species, including *P. bungeana* and *Tilia cordata*. These trees can be complemented with ornamental grasses, such as *M. sinensis*. This strategy considers both the seasonal naturalistic appeal and the need for low maintenance, thereby minimizing disturbances to the tranquil environment caused by human activity.

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