

Renewal Design of an Urban Heritage Park: The Case of King Yu's Terrace Park

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Abstract: With the increasing awareness of heritage city protection around the world, relevant laws and regulations are constantly improving, and the methods and approaches for protection are gradually enriching ^[1]. Heritage protection work has made significant progress. In recent years, heritage parks have become an effective model for balancing urban construction and heritage protection, not only for the effective protection of the site itself and its environment, but also for the use of the site and its cultural heritage ^[2]. This article takes King Yu's Terrace Park as an example for research. As an ancient capital of eight dynasties, Kaifeng in Henan Province has many historical relics, one of which is King Yu's Terrace Park. The overall renewal planning and design of the park focuses on the protection of ancient buildings, ecological landscape design, and cultural display ^[3]. A complete set of planning and design strategies is summarized to provide reference for the future renewal and renovation of King Yu's Terrace Park.

Keywords: Heritage park; Protection of ancient architecture; Ecological landscape design; Cultural display.

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1. Project overview

The project is located in Kaifeng City, Henan Province, China, in the central region of China, the Eastern part of Henan Province, and the hinterland of the Central Plains. It is one of the central cities in the core area of the Central Plains City Cluster of China, a cultural and tourist city, as approved by the State Council. It has a total area of 6266 square kilometers and a resident population of 4824016 (**Figure 1**).



Figure 1. Location analysis diagram

2. Site analysis

2.1. Macro analysis

2.1.1. Project location analysis

King Yu's Terrace Park is located in China's Henan Province Kaifeng City. The Southeastern corner of the city is dominated by the surviving Yuwangtai. The park is named after the existing King Yu's Terrace. King Yu's Terrace Park has a long history and a rich cultural heritage. It was opened as a park in 1955 and has experienced a history of 2,500 years since then. The park covers an area of 26.1 hectares (**Figure 2**).

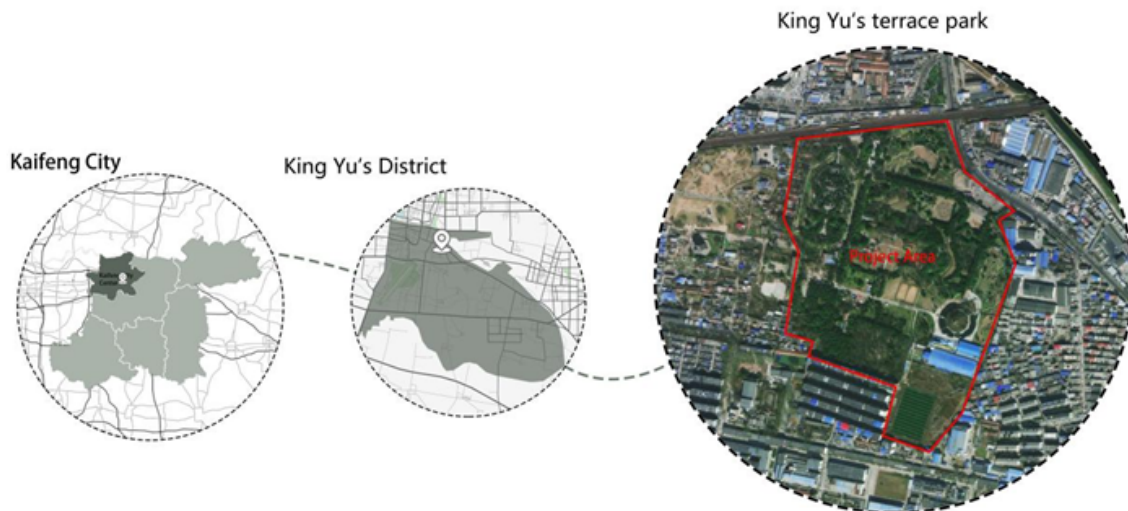


Figure 2. Park location diagram

2.1.2. Conservation Planning of the ancient city layout analysis

According to the Kaifeng Old Town Pattern Conservation Plan, King Yu's Terrace Park is an important historical and cultural conservation area, undertaking the role of heritage conservation and spreading historical culture (**Figure 3**). The protection and display of the existing ancient buildings within the park should be enhanced so that more people can understand the history and culture behind them.

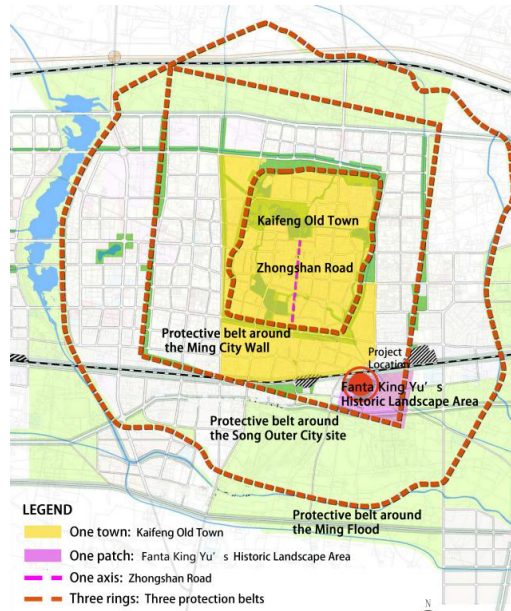


Figure 3. Kaifeng Conservation Planning of the ancient city layout diagram

2.1.3. Current situation of tourism resources analysis

Kaifeng has 8 national 5A and 4A tourist attractions and 19 national key cultural relics protection units. China Kaifeng Qingming Cultural Festival, the China Kaifeng Chrysanthemum Cultural Festival attract many tourists from home and abroad (Figure 4). Most of the heritage parks and sites are concentrated in the city centre. In the King Yu's Terrace District, there is only one King Yu's Terrace Park.



Figure 4. Kaifeng, current situation of tourism resources diagram

2.1.4. Historical and cultural analysis

King Yu's Terrace Park has a long history and a rich cultural heritage. It was opened as a park in 1955 and has experienced a history of 2,500 years since then, and is one of the key cultural heritage protection units (**Figure 5**). The main attractions include the Ancient Blowing Platform, the Imperial Book Building, the Qianlong Imperial Tablet Pavilion, the Three Sages Ancestral Hall, the Yu Wang Hall and the Water Virtue Ancestral Hall. In addition to the cultural relics, the park also has the Xinhai Revolution Martyrs' Memorial Garden, Peony Garden, Cherry Garden, Fangchun Garden, and other sightseeing spots, which are national A-class tourist attractions.

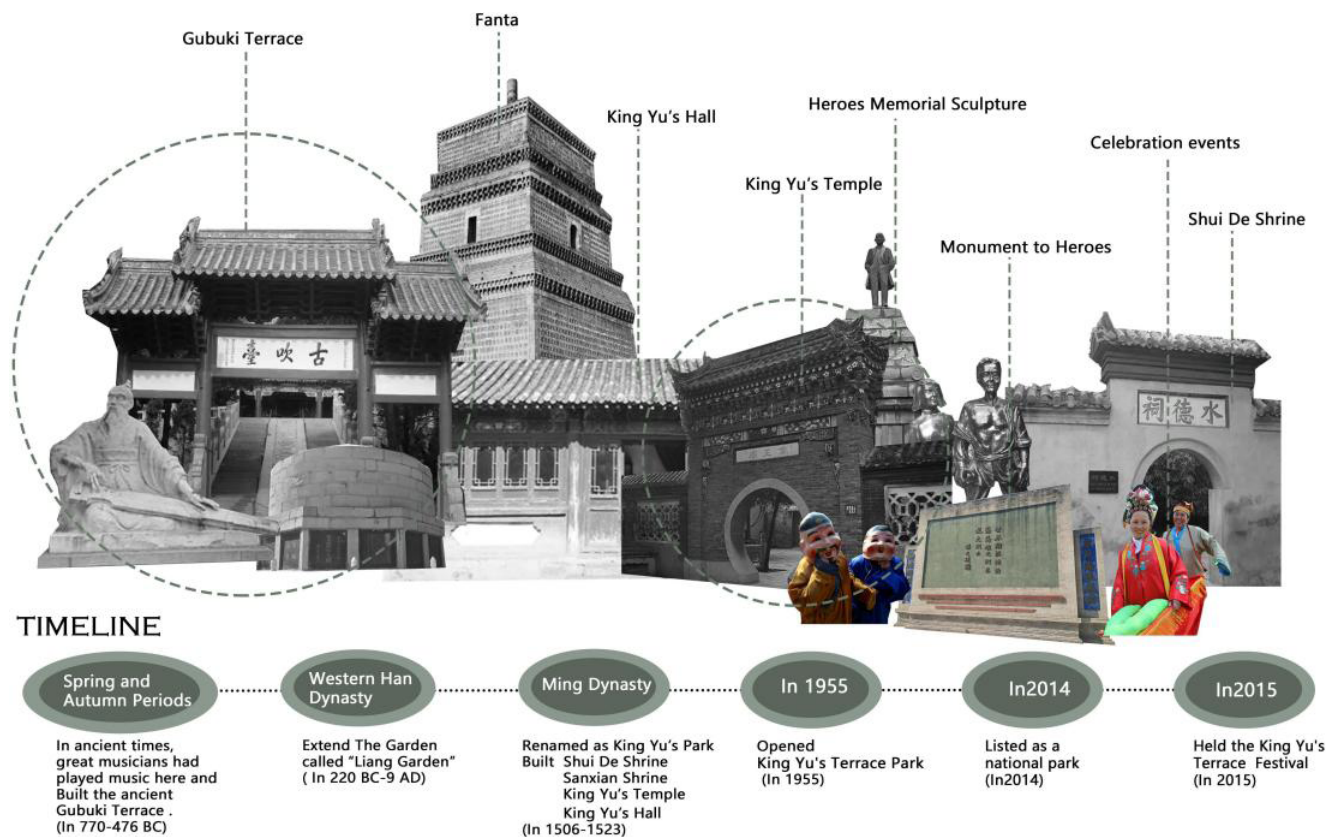


Figure 5. King Yu's Terrace Park historical and cultural diagram

2.2. Meso-analysis

2.2.1. Surrounding traffic analysis

The area around King Yu's Terrace Park is well served by transport facilities for easy commuting. It is bordered by the train tracks to the North, Fanta I Street to the West and King Yu's Terrace Road to the East. The planned road network is well-connected and residents can reach the park entrance from a number of roads. There are a number of bus stops within 500 metres of the site, making it easy for residents to access the park (**Figure 6**).

2.2.2. Surrounding green space analysis

In the vicinity of King Yu's Terrace Park, there is only one Fanta Park within a distance of 500 meters and a series of parks around the city wall within a distance of 1000-1500 meters (**Figure 7**). Therefore, it is clear that there is a lack of large parks for leisure, fitness, and recreation for the surrounding residents, and that King Yu's Terrace Park, as the green centre of the King Yu's Terrace district, should provide a better space for green services.

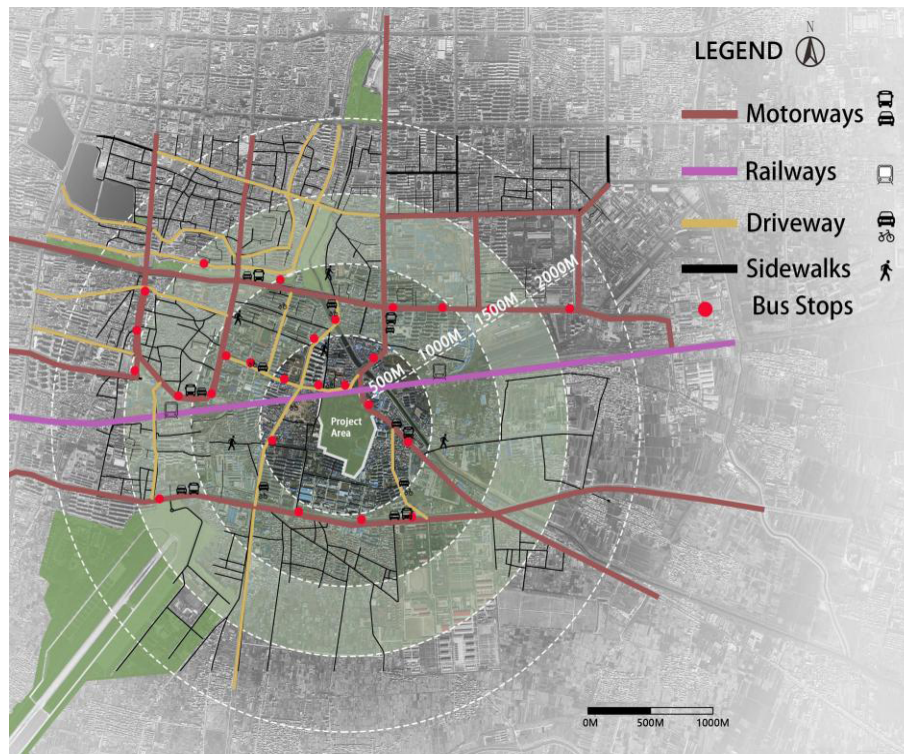


Figure 6. King Yu's Terrace Park surrounding traffic diagram

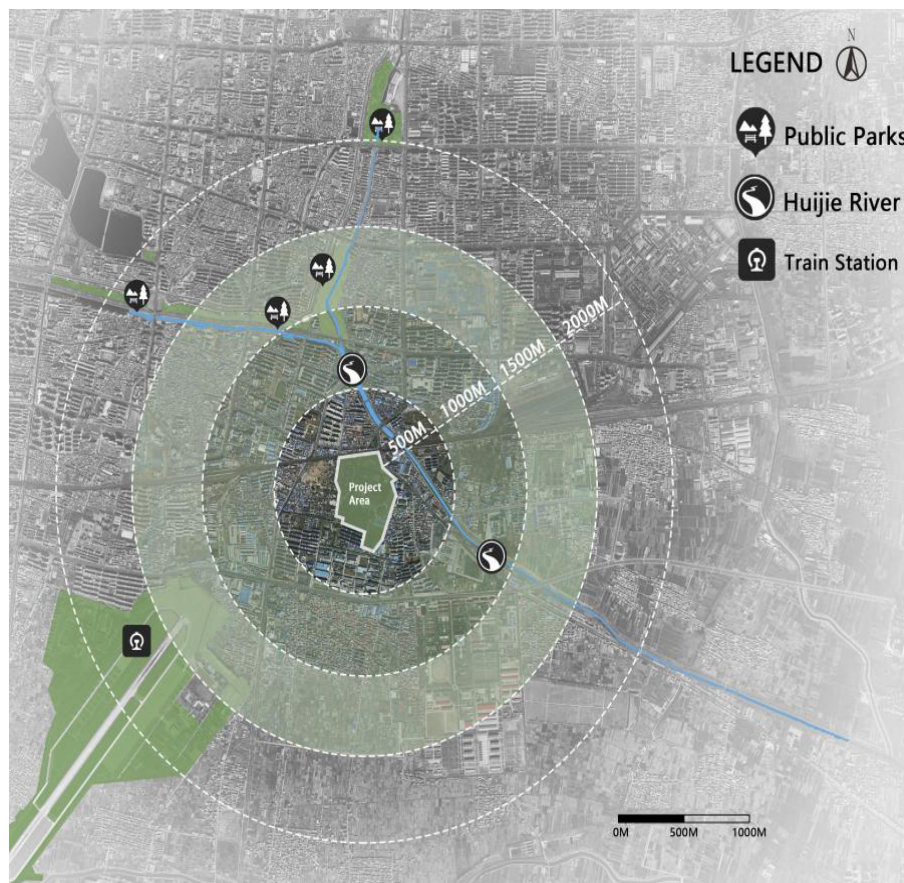


Figure 7. King Yu's Terrace Park surrounding green space diagram

2.2.3. Surrounding site land use analysis

The surrounding area is predominantly residential, with some commercial activity present. Around the site, the mixed buildings are mostly low-rise, with the residential buildings being high-rise. To the West of this park is a small park, famous for the Fanta, one of the oldest surviving Buddhist buildings in Kaifeng. The park is enclosed on all sides, with a fence as a boundary line. Only two entrances can be accessed, the main entrance area with a large parking area and a secondary entrance connected to the Prosperity Tower Park (Figure 8).



Figure 8. King Yu's Terrace Park surrounding green space diagram

2.3. Micro-analysis

2.3.1. Summary of current issues

- (1) Current state of the building: The old building is well preserved but lacks display design. The other service buildings are in a state of disrepair, affecting their use.
- (2) Infrastructure: There is very little infrastructure within the park, with only a small number of facilities for children's activities, sports activities, and benches. Most of the infrastructure is in a state of disrepair.
- (3) Paving: The paving materials for roads are mainly brick, gravel, asphalt, concrete, and rubber. The quality of the paving materials has also deteriorated due to prolonged use. Also, due to the lack of overall planning and design of the roads, there is also a part of the pavement where people walk out on their own.
- (4) Plants: As this is a historical park, most of the plants inside the park are very tall, but a lack of maintenance and management means that many of them grow wild. There are also a few plants in a poor state of growth.
- (5) Water resources: Most of the water resources within the park have dried up due to a lack of management over a long period of time. Only the area of the water park has a small amount of existing water. The dried-up rivers should affect the aesthetics of the landscape (Figure 9).

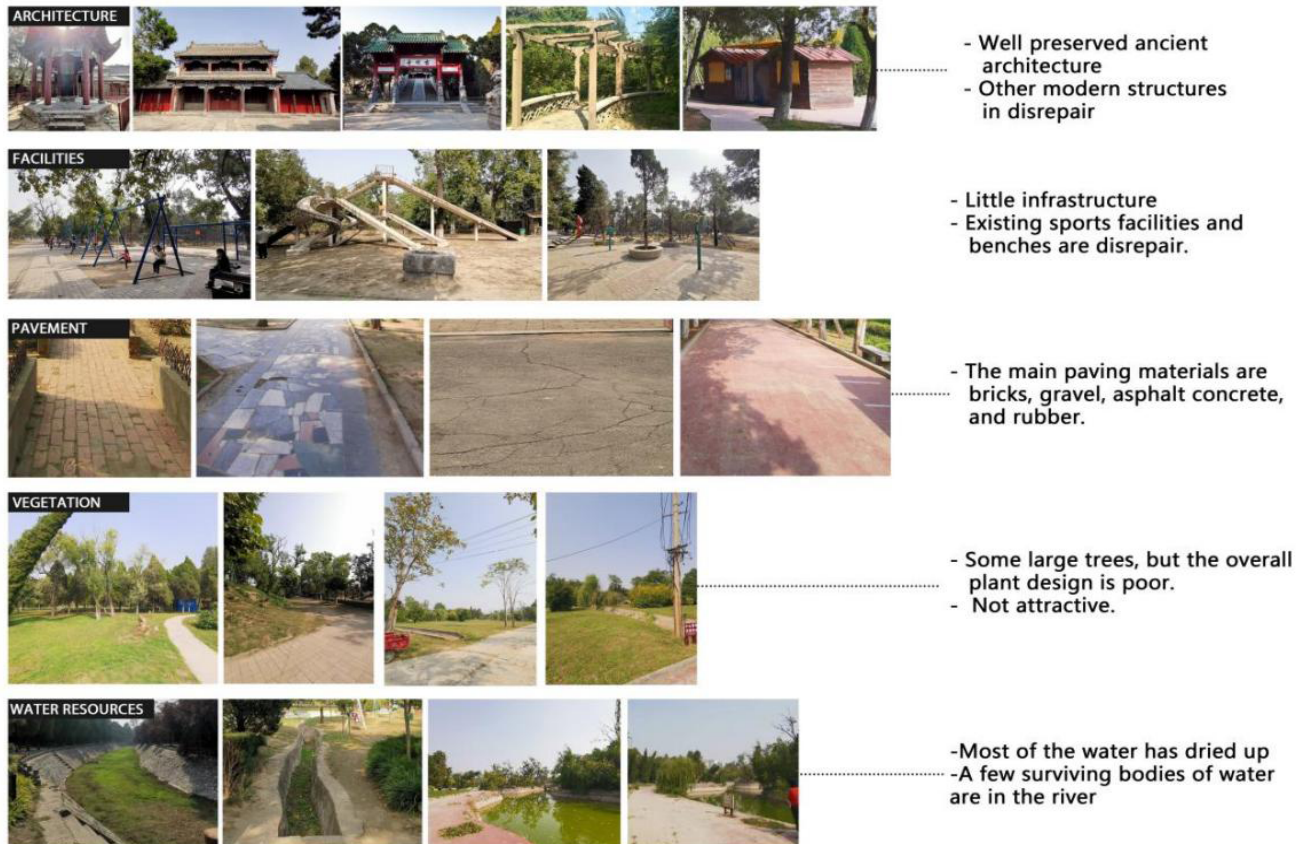


Figure 9. Current issues diagram

3. Design goals and strategies

3.1. Design goals

Based on the above analysis and discussion, it was determined that King Yu's Terrace Park would aim at ancient preservation, cultural display, and ecological landscape design, featuring the promotion of 'Song' culture and creating a heritage park that effectively conveys historical and cultural information (Figure 10) [4].

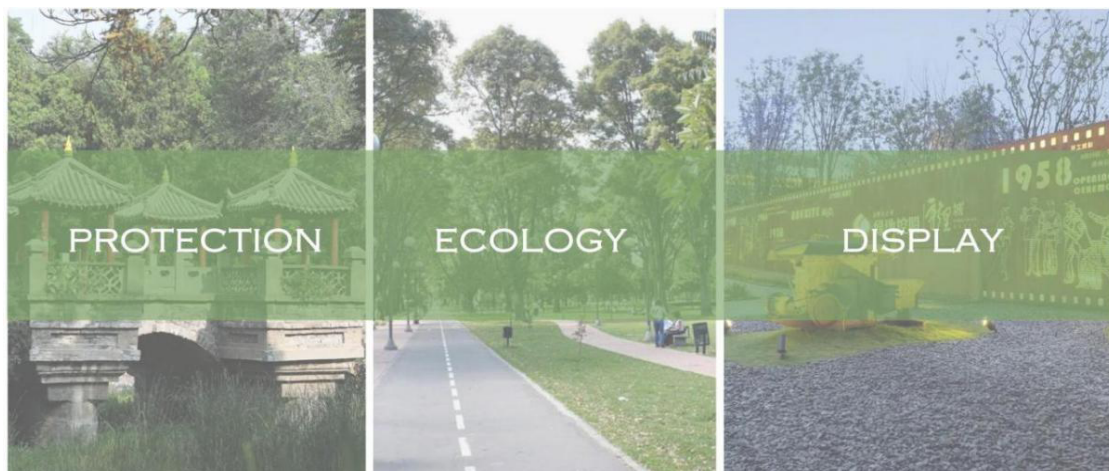


Figure 10. Design goal diagram

3.2. Design strategies

According to the analysis of the current situation, the design strategy for the renewal of King Yu's Terrace Park focuses on three directions. Ancient architecture protection, ecological landscape design, and cultural display (Figure 11)^[5].

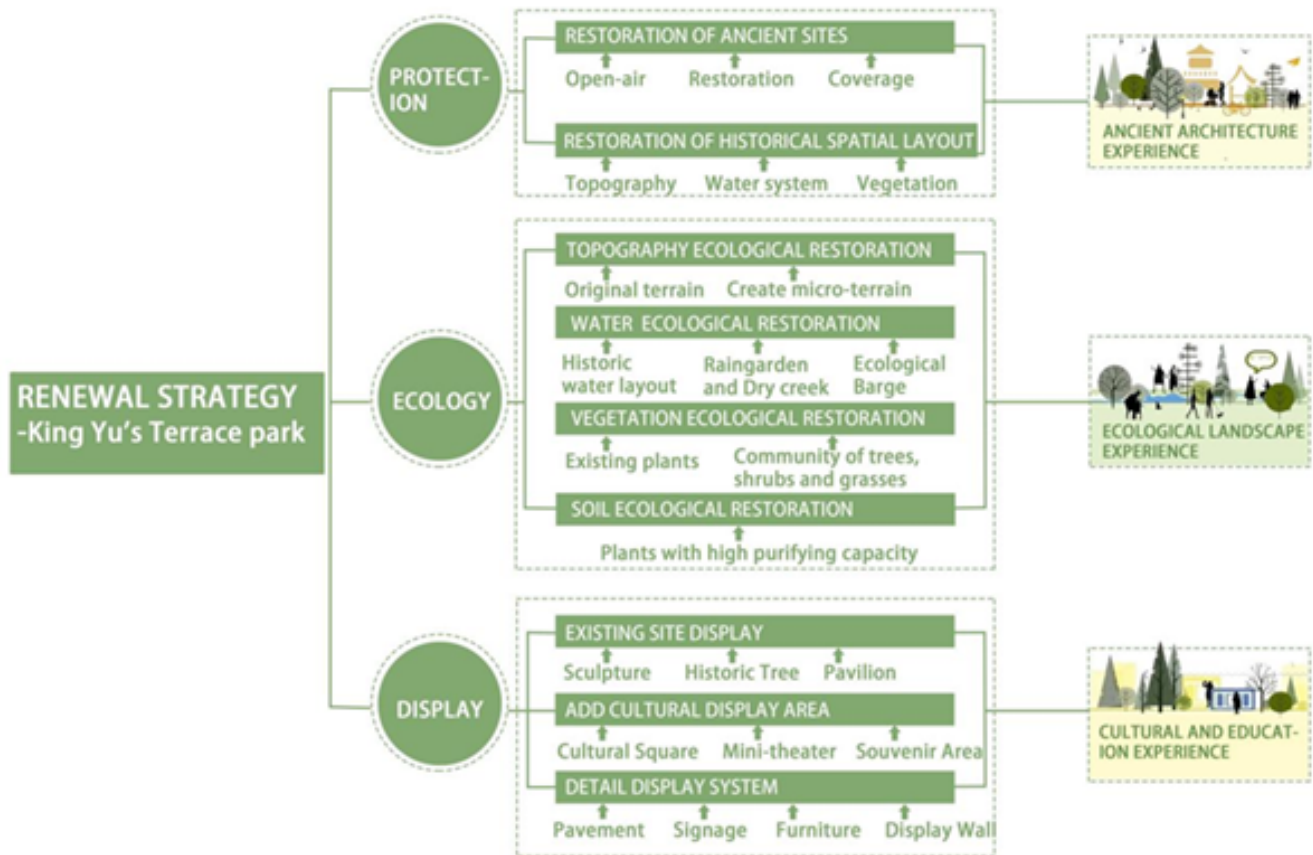


Figure 11. Design strategy diagram

3.2.1. Design strategy of protection

In terms of protection, the restoration of the ancient architectural body and the restoration of the historical spatial layout are used (Figure 12). Ancient architecture protection is the way to present the original appearance of the site, its own value and excavated artifacts to the public. For sites with overlapping remains from different periods, the focus should be highlighted and the logical hierarchy in time and space should be handled^[6].

The current site landscape protection measures and display methods do not have a unified standard, as summarized through relevant information. The main object of this study can be divided into open-air protection display, restoration and protection exhibition and site reconstruction display three ways^[7]. Historical spatial layout restoration appropriately strengthens the restoration of topography, water system, plants and ancient site boundaries to strengthen the original pattern of the park display. Greening, structures, roads, and other means are used to strengthen the existing archaeological zoning boundaries and improve boundary recognition. High platforms, landscape pillars, and landscape frames are set up to guide the control of angular views, provide multiple perspectives of top, flat, and elevated views, and create a variety of landscapes, such as frames and pairs of views, to strengthen the viewer's perception of the site^[8].



Figure 12. Design strategy of protection diagram

3.2.2. Design strategy of ecological landscape design

In terms of ecological landscape design, the main focus is on the ecological restoration of the site's internal topography, water, plants, and soil (Figure 13).

The topography design of the site park is to preserve the original topography of the park, while making full use of the current topography to create micro-topography, increase the topographic changes inside the park, and enrich the sense of different spatial experiences ^[9]. The ecological nature of the site is improved through planting design and terrain design.

The water design restores the original water pattern of the park, and according to the current conditions of the park, a wetland is designed in the high topography area of the park and a dry creek is designed in the low topography area to establish the first ecological barrier for the internal environment of the site ^[10]. In addition, permeable pavement is used for roads, squares, parking lots, etc., and grass planting ditches are used around the perimeter to effectively slow down surface runoff and play a good filtering role for rainwater, and the construction and maintenance costs are low, which also follows the principle of economical and applicable landscape ecological restoration construction ^[11].

The planting design should take the protection and display of the site as the core, not to destroy the original vegetation, and to preserve the old trees and well-grown plants in the current situation inside the site. At the same time, some native plants and exotic plants are added to enrich the plant species, create a beautiful plant landscape

and a good combination of plant community relationship of trees, shrubs, and grasses.



Figure 13. Design strategy of ecological landscape design diagram

3.2.3. Design strategy of cultural display

In terms of cultural display, the current site display is adopted, increasing the cultural display function area and detail display (Figure 14). The current site display is a cultural display through the design of cultural sculpture, ancient trees, and antique buildings. The cultural display function area can be designed for handicraft experience, a small theater, and a souvenir display area^[12]. Detail display design refers to the selection of paving materials, signage design, furniture design, and the design of cultural display landscape walls^[13]. In the design of historical and cultural park, this details design has a good landscape expression effect and can also play the role of cultural communication.



Figure 14. Design strategy of cultural display diagram

4. Conclusions

In heritage parks, priority should be given to heritage protection, and then, combined with the historical and cultural characteristics of the site, ecological design methods should be adopted to form a unique public green activity space ^[14]. This article analyzes the current situation of King Yu's Terrace Park from different levels of macro, meso, and micro, and proposes planning and design strategies for the park's renewal and renovation from three perspectives: ancient building protection, ecological landscape design, and cultural display ^[14]. This provides reference significance for the future renewal and renovation of King Yu's Terrace Park.

Disclosure statement

The authors declare no conflict of interest.

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