

DIPLOMA THESIS

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2024

HUNGARIAN UNIVERSITY OF AGRICULTURE AND LIFE SCIENCES
INSTITUTE OF LANDSCAPE ARCHITECTURE, URBAN PLANNING AND GARDEN
ART
BUDAPEST

MASTER OF ARTS IN LANDSCAPE ARCHITECTURE AND GARDEN ART

Kaifeng Yellow River National Cultural Park Green Space Design

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Budapest,2024

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ABSTRACT

With the rapid development of China's economy and culture, problems such as a single form of cultural expression have arisen, a situation that has gradually improved as the government and the masses have also paid more attention to the needs and development of culture. This paper takes the Yellow River National Cultural Park in Kaifeng City, China as the research object to explore the mode that is conducive to the development of the park, the project is located in Kaifeng City, Henan Province, the north side of the site, the west side of the village, the south side of the highway entrance and exit, and the east side of the Yellow River there is a tributary of the Qingshui River, an area of 16 hectares.

This paper is mainly divided into three parts, firstly on the basis of definition and case study, study the design theory and method of national cultural park and so on.

Secondly, the basic information of Kaifeng city, traditional culture and Yellow River culture and the current situation of the site are analyzed to provide a basis for the later design.

Finally, according to the preliminary analysis, design concepts and strategies are proposed to divide the park into seven different functional areas such as main entrance square, cultural square, exercise area, leisure area, ecological area, waterfront area, parking lot and so on, and each functional area is closely connected to each other, and at the same time, the Yellow River cultural elements and the construction of the park are also better integrated together, so as to complete the overall design of the park.

The purpose of this article is to explore the solution of the new park development mode, explore how to use landscape design techniques to solve the problem of cultural heritage and show the form of a single problem, through the excavation of Kaifeng City's history and culture, and then integrated into the landscape design of the national cultural park, so as to provide residents and visitors with a comprehensive park for fun.

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I . INTRODUCTION

The construction of the Yellow River National Cultural Park is an important initiative for the protection and utilization of China's rich history, culture and natural resources. As the mother river of the Chinese nation, the Yellow River has a long history and culture, and its basin area is rich in humanistic and natural landscapes.

The construction of the Yellow River National Cultural Park aims to enhance the overall image and ecological environment of the Yellow River Basin area by creating an eco-tourism area suitable for tourism, employment and residence, and at the same time, to excavate, protect and pass on the historical and cultural heritage of the Yellow River Basin. Meanwhile, the Yellow River National Cultural Park will also strengthen the protection and inheritance of the Yellow River cultural heritage, and carry out a variety of cultural education and science popularization activities in order to enhance the public's knowledge and understanding of the Yellow River culture.

Definition: The Yellow River National Cultural Park is an important symbol of Chinese culture, which is centered on the Yellow River culture and aims to protect and pass on the rich history, culture and natural resources of the Yellow River. This park involves a number of provinces, autonomous regions and municipalities along the Yellow River, and is a comprehensive park integrating natural landscape, history and culture, and tourism experience.

1.1 Research background

1.1.1 Government policy direction

(1) National level

President Xi Jinping pointed out that the construction of national cultural parks is an important initiative for the protection and inheritance of cultural resources, and is an important embodiment of the promotion of China's outstanding historical culture to be innovative, inherited and protected. In recent years, the state has issued a series of policies and construction programs. In 2017, China proposed the establishment of a national cultural park, which has become an important symbol of Chinese culture. In October 2019, it issued a program for the construction of national cultural parks for the

Great Wall, the Grand Canal, and the Long March. In October 2020, it proposed the construction of a national cultural park for the Yellow River, and in July 2023, the state issued a "yellow river national cultural park construction and protection Planning (INT-01)", provides scientific guidelines for the construction of subsequent national cultural parks, and the Yellow River National Cultural Park will become an important platform for the protection, inheritance and promotion of Yellow River culture in the future^[9].

(2) Henan Province level

The Yellow River flows through nine provinces in China, and in Henan the Yellow River flows through eight prefecture-level cities^[13]. As the center of China's cultural geography, Henan Province is rich in historical and cultural resources, and in September 2019, President Xi Jinping emphasized during his visit to Henan Province that the Yellow River culture is the root and soul of the Chinese nation, and that there is a need to dig deeper into its contemporary value and tell the "Yellow River story" well (INT-02). In December 2023, Henan Province issued the Construction and Protection Plan for the Yellow River National Cultural Park (Henan Province Region) (INT-03), stating that the national cultural park should be designated as a control and protection area, a theme display area, a cultural and tourism integration area, and an area for optimizing the traditional use of the park.

(3) Kaifeng city level:

Kaifeng Municipal Government pointed out that Kaifeng City, as the core display area for the construction of the Yellow River National Cultural Park, needs to tell the story of the Yellow River in Kaifeng City, inherit and carry forward the Yellow River culture, and more importantly, it needs to articulate the construction and protection planning issued by Henan Province. In order to better protect and inherit the Yellow River culture, Kaifeng City began to prepare the Yellow River National Cultural Park (Kaifeng City area) construction and protection planning (INT-04), while the plan points out to fully explore the Yellow River culture in Kaifeng City, the value of the unique cultural and tourism resources of the Sung Dynasty as well as cultural relics protection and revitalization of the use of the city. 2020, Kaifeng City Municipal Government considered and passed the "Kaifeng City, along the Yellow Riverside area special In 2020, Kaifeng Municipal Government considered and passed the special design of

Kaifeng Along Yellow River Area (INT-05), which is dedicated to creating the core area of Yellow River National Cultural Park.

1.1.2 Background of Yellow River National Cultural Park

National cultural parks are distinguished from other types of parks by paying more attention to the expression of local cultural elements. While the construction of the Yellow River National Cultural Park is underway, many studies and researches on the Yellow River National Cultural Park have been done by Chinese research academics. For example, Wang Xiuwei discusses the Yellow River National Cultural Park from the perspective of spatial logic and coordination mechanism of heritage protection and tourism utilization^[1]; Li Xinxin discusses the Yellow River National Cultural Park from the perspectives of the value of the construction of the era, the challenges of reality and the implementation path^[2]. At the same time, with the improvement of people's education level and national quality, ordinary people also pay more and more attention to the inheritance and development of local culture. Therefore, in order to better meet people's needs for spiritual level, this requires the city to build a comprehensive park with regional culture.

1.2 Purpose and significance of the research

1.2.1 Research purpose

The construction of the Yellow River National Cultural Park aims to promote the protection and inheritance of the Yellow River culture in many ways. The primary purpose is to protect the natural resources and cultural heritage of the Yellow River Basin, and through scientific and reasonable planning and management, to ensure that these valuable resources are effectively protected to avoid further damage and loss. Secondly, the construction of the park creates an educational and enjoyable environment for local residents and tourists through cultural heritage, ecological restoration, vegetation recovery and other measures. In addition, the construction of the park also aims to promote the development of the local economy, through the development of cultural tourism and other industries, to drive the economic development of Kaifeng City.

Based on the landscape planning and design of the Yellow River National Cultural Park in Kaifeng City, this paper analyzes the existing problems of the project site in depth and discusses them with the core of the research on the design of landscaping engineering. In the process of planning and design, it is necessary to strictly follow the principle of serving the needs of different people, extracting the Yellow River cultural elements and inheriting the historical culture. Through this process, the cultural expression methods and design guidelines of the master planning and design in the Yellow River National Cultural Park are summarized.

1.2.2 Significance of the research

The construction of the Yellow River National Cultural Park is not only the inheritance and promotion of the Yellow River culture, but also the embodiment of the cultural self-confidence of the Chinese nation. Through the construction of the park, it can enhance the public's knowledge and understanding of the Yellow River culture, and improve the sense of cultural identity.

The construction of the Yellow River National Cultural Park is proposed on the basis of a deep understanding of the issue of the importance of the Yellow River culture. It hopes to realize the inheritance and promotion of the Yellow River culture and promote the sustainable development of the Yellow River Basin through the protection of natural resources and cultural heritage, improvement of the ecological environment and other measures. It can be seen that the construction of the Yellow River National Cultural Park will have a positive impact.

(1) Social significance

As an open space for recreation, parks provide an excellent place for people to relax outdoors. Here, people can put aside the fast pace of life for a while and have moments of relaxation after a busy day at work ^[3]. These opportunities and conditions allow people to feel the beauty of life and experience the blend of nature and tranquility. Through such a place, the park not only meets the needs of people's leisure, but also inadvertently improves the quality of life and sense of well-being. The integration of regional culture and landscape construction can not only beautify the local living environment, but also enhance the cultural atmosphere of local life, so that people can

feel more profoundly the human history of the local cohesion for thousands of years, so that people can play and relax to feel the characteristics of the regional culture, so as to educate and enjoy, the dissemination of history and culture, inheritance and development of great significance [4].

(2) Cultural significance

The Yellow River flows through Kaifeng City, Qingshui River as one of the tributaries of the Yellow River, its water quality, flood season and the surrounding environment will directly affect the ecological environment of the site, so in the design of the Qingshui River need to take into account the impact of the flow period and dry period; at the same time, it also carries a rich historical and cultural information, in the design of the Kaifeng Yellow River National Cultural Park, the cultural value of the ShuiQing River can be embodied through cultural displays along the banks of the river and other ways. value can be embodied through the cultural display along the river bank.

1.3 Definition

1.3.1 National park

In China, a national park is a specific land or marine area approved by the state to be established and led by the state for management, with clear boundaries, and with the main purpose of protecting large natural ecosystems that are representative of the state, and realizing the scientific protection and rational use of natural resources (INT-06).

In the vision of IUCN, national parks are given a broader definition. They are viewed as large natural or near-natural areas that not only have important responsibilities for the protection of large-scale ecological processes and the maintenance of the species and ecosystem characteristics of the area, but are also committed to providing opportunities for a diversity of activities that are compatible with the environment and culture. These opportunities include spiritual upliftment, the conduct of scientific research, the organization of educational activities, and the enjoyment of leisure and recreation, thus promoting harmonious coexistence between humans and nature (INT-07).

1.3.2 Cultural park

Cao Zhongda, a Chinese research scholar, explained the definition of cultural parks, which emphasizes the presentation of cultural symbols and the conveyance of cultural connotations, based on humanistic dynamics and material resources, and presenting cultural themes through landscape displays and experiential interactions ^[5].

Here, tourists can not only deeply understand the traditional Chinese culture and local culture, but also personally feel the charm of it and enjoy a pleasant leisure time. Therefore, cultural parks play an important role in upgrading the cultural taste of cities and promoting the development of cultural tourism.

1.3.3 National Culture Park

Regarding the definition of national cultural park, there is not a clear definition now, and different research scholars think the interpretation. Sun Hua believes that: national cultural park is a cultural area that is designated by the state, managed by the state and open to the public in whole or in part by the government at the national level based on the purpose of protecting the important cultural resources of the country and displaying the essence of the culture of the country for the purpose of providing services for the historical research, cultural inheritance, public education and leisure of the people, and relying on the important cultural heritage^[6]. According to Li Shuxin, a national cultural park is a specific area approved by the state to be set up and managed by the state to protect cultural relics and cultural resources that are representative of the state, with the main purpose of passing on and carrying forward the spirit of the Chinese nation's culture, cultural beliefs and values, and to carry out the management and operation of the park^[7].

1.4 Research content and methodology

1.4.1 Research content

This research is through the investigation and study of the resources of the site, the study of the theory and strategy of the national cultural park planning and design, combined with the analysis of excellent cultural park cases, from the landscape culture,

landscape detail design and other aspects of the Yellow River culture in the cultural park to summarize the reasonable expression of the Yellow River culture in the cultural park strategies and techniques. The main research includes preliminary investigation and research on the Yellow River cultural resources in Kaifeng city area, combining the current conditions and theoretical basis, exploring how to show the Yellow River cultural resources in Kaifeng city in the park design, so that the cultural park can better reflect the local cultural characteristics, so as to complete the rational layout of functional zoning, detailed design, and special design, and to complete the overall design of the Yellow River National Cultural Park.

1.4.2 Research Methods

(1) Literature analysis method

In the China Knowledge Network database as well as other data sites, conduct extensive reading of books, papers and periodicals literature related to cultural parks, national cultural parks, theme parks, Yellow River culture, landscape planning and design. At the same time, theoretical research and screening are conducted, which also provides theoretical support for subsequent case studies and design work.

(2) Case study method

The author searched for several excellent cultural park cases on the GOOOD website and some case study websites, selected cases suitable for the author's site type, summarized the park's design techniques and expressions, and exploited strengths and avoided weaknesses. These cases provide the author with a rich foundation of website design experience.

(3) Status quo research method.

Through on-site observation, questionnaire survey and photographic records, the field investigation of the current design site was conducted to examine in detail the surrounding environment, road traffic, current plants and the needs of the residents. During the field investigation in December 2023, the most realistic materials and data

of the site were obtained, and the existing problems were found, which provided a strong basis for solving the real problems.

II. CASE STUDY

2.1 Tianjin Firefighting Culture Park

2.1.1 Project Overview

Located in the Tianfu New District of Chengdu, the Tianfu Firefighting Culture Park occupies an area of 3.8 hectares, with its favorable geographical conditions and natural environment. During the planning, the designers fully considered the dual development needs of the present and the future, and skillfully integrated Chengdu's urban characteristics and humanistic essence into it, showing the development style and spirit of Chengdu's park city in the new era. The park creates a unique cultural atmosphere of art thought through the combination of diversified art forms and rich contents. At the same time, with the scene setting and on-site activities featuring fire prevention culture, residents can naturally acquire knowledge of fire extinguishing during leisure and entertainment, and then invisibly raise their awareness of fire prevention. This design not only enhances the cultural connotation of the park, but also effectively promotes the popularization and dissemination of fire safety knowledge.



Figure. 1 Plan of Tianfu fire Culture Park /(INT-08)

2.1.2 Design Analysis

The kinetic scheme adopts fresh, smooth, concise and powerful curve design, which gives a strong sense of geometric beauty to the whole site.

In the design of the boulevard road, the designer adopts a varied curved structure, and these curves not only have a guiding function, but also add a sense of dynamics and interest to the site. More importantly, visitors can explore and discover the beauty of the site from different perspectives.

In addition, the scheme also skillfully incorporates various natural elements, such as vegetation, water systems and topography, which complement the road design and together create a harmonious environment that is both natural and artificial. Visitors can not only feel the serenity and beauty of nature here, but also discover new landscapes and details as they walk, enjoying a visual experience that changes from step to step. This design undoubtedly enhances the visitor's experience and makes the site a beautiful space worth visiting and exploring again and again.



Figure. 2 Effect drawing of Tianfu fire Culture Park Road /(INT-09)

The park is cleverly divided into four areas based on the unique "X" dynamic line, and each area uses modern means and facilities and equipment to display unique thematic content. Among them, the "Learning" area focuses on the popularization of basic knowledge of firefighting technology, providing the public with a platform for in-depth understanding of firefighting knowledge; the "Experience" area is dedicated to the display of ecological science and technology, so that visitors can feel the charm of science and technology in the hands-on experience; The "Fun" area is themed with fire camps, creating a fun-filled fire safety education space for children; the "Sports" area focuses on recreation and sports, providing a good place for the public to exercise and relax.

Whether it is the demand for fire safety education, the purpose of campus study, the expectation of entertainment and games, or the demand of market promotion, the park can meet the diversified needs of different user groups. The versatile scenario function of its design makes the park not only a place for education and learning, but also a comprehensive park integrating entertainment, leisure and sports. Such a design concept not only enhances the functionality of the park, but also greatly enriches the cultural life of the public, making the park a truly ideal place for leisure in the minds of the public.



Figure. 3 Map of Tianfu fire Culture Park / (INT-10)

2.1.3 Significance

The designer skillfully combines the art form and rich content of the park, fully demonstrating the common qualities and utility of "firefighting culture" and "theme park", and giving the park a profound cultural connotation. By carefully constructing scenarios featuring firefighting culture and arranging on-site interactive devices, the designers have skillfully integrated the knowledge of firefighting in daily life with the leisure and recreational activities of the residents. Taking the "Play" theme area as an example, the area provides a fire drill camp for children, enabling them to come into contact with and learn to use daily firefighting equipment and master firefighting culture knowledge in the course of play. This is not only important for children's fire safety education, but also helps parents to enhance their fire safety awareness.

Tianfu Firefighting Culture Park provides a valuable reference for the Yellow River Culture Park. Specifically, it inspires us to integrate the Yellow River culture and the Yellow River spirit into the construction of the park, and to inject the park with a deep cultural heritage. By creating a characteristic Yellow River cultural atmosphere and setting up interactive devices to experience the Yellow River culture, we can invisibly arouse people's concern and love for the Yellow River culture, and further enhance

their awareness of protecting and inheriting the Yellow River culture and promoting the Yellow River spirit. This way of integrating cultural elements and park construction not only helps to enhance the cultural taste of the park, but also helps to promote the inheritance and development of the Yellow River culture.

2.2 West Chang'an Street Culture and Arts Park

2.2.1 Project Overview

The West Chang'an Street Culture and Art Park is located in the heart of Beijing, in the center of the old city where Chang'an Street extends westward. This 7.8-hectare park, although surrounded by old buildings and narrow streets, has become an indispensable part of citizens' lives with its openness. In recent years, with the rise of a large funeral facility and an automobile parts city in the vicinity, the park has developed a unique "U" shaped urban texture.

It is particularly noteworthy that this project skillfully blends tradition and modernity, building a bridge of communication between the old burial complex and the new urban culture. It successfully transforms a traditional thrift market into a creative and energetic entertainment space, injecting new vitality into urban culture.

The design of the park follows the theme of literature and art, incorporates futuristic elements, and connects with the neighboring blocks with soft lines to form an integrated spatial pattern. It not only provides a resting place for the public with art and humanities, but also reserves a broad space for the development of cultural industry in the future. Elderly people can enjoy a cup of coffee in the sunshine or participate in outdoor sports, while children can play on the spacious site and experience horseback riding, roller skating and other activities. The West Chang'an Street Culture and Art Park not only enriches the public life of citizens, but also meets the social needs of the younger generation, becoming a cultural landmark with both historical heritage and modern flavor.

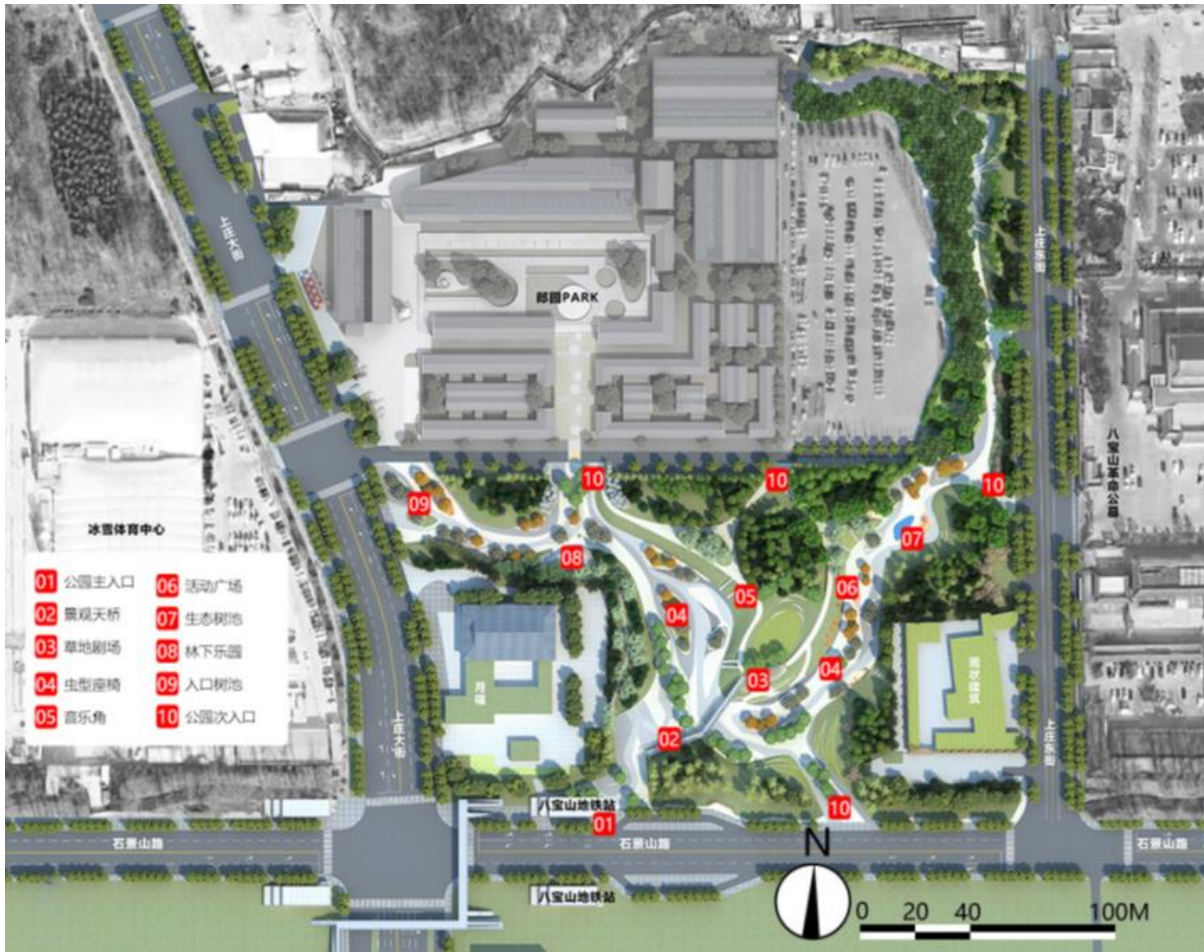


Figure. 4 Plan of West Chang'an Street Culture and Art Park / (INT-11)

2.2.2 Design Analysis

The overall plan of the park is dominated by curves, which are elegantly intertwined like a meandering "river valley". This design not only creates a continuous, sunken green ecological landscape zone, but also skillfully utilizes the natural topography. The eastern hill rises naturally as a result of this design, subtly blocking the view of the eastern burial complex. At the same time, the raised hill in the center creates a pleasant microclimate for the river valley area and provides a unique landscape backdrop especially for the hillside south of the Xiangyang Primary School.

Artistic painted terrazzo flooring has been chosen for the park's flooring, while a simple yet modern landscape bridge spans the river valley. The valley's "riverland" consists of a colorful pervious concrete walkway that is both beautiful and functional. When visitors cross the bridge, they will come to the core activity area of the park, the Vitality Lawn. Not only can large-scale cultural and social events be held here, but visitors can

also enjoy the view from the streamlined "corridor of the future". However, what visitors see here is not the actual river, but a constant stream of visitors and activities in the park.

In the overall landscape design of the park, the designers cleverly used silver grey, metallic and fluorescent colors to add a sense of futuristic technology to the whole park, so that visitors can feel an avant-garde and modern atmosphere during their visit.



Figure. 5 Aerial view of West Chang'an Street Culture and Art Park /(INT-12)

2.2.3 Significance

The West Chang'an Street Culture and Art Park is characterized by its extensive public participation, and the park is carefully equipped with a children's theme park, "bug-shaped seats" for art exhibitions, "Theater on the Grass" and "Musical Instrument Corner" as indoor and outdoor venues, and a woodland sports park. "Musical Instrument Corner", and a forested sports park, among other facilities. The design not only meets the needs of the public for communication, parenting and teaching, but also leaves space for other cultural development activities to flourish. People can stop here leisurely, communicate and relax, and participate in all kinds of social activities, thus building harmonious interpersonal relationships and creating a cozy social atmosphere.

For the Yellow River National Cultural Park, the spatial form language and site facilities planning of the West Chang'an Street Culture and Art Park are of great significance. Kaifeng Yellow River National Cultural Park proposes to use smooth curves to connect the roads and functional areas in the park, thus forming a harmonious and unified whole. In order to create an interesting space for recreation and learning, the Yellow River National Cultural Park will introduce "cultural interpretation" activities featuring cultural performances, "folk culture sculptures" displaying cultural and scientific themes, as well as outdoor amphitheaters, recreational areas and other landscape nodes. These designs are intended to meet the needs of people's daily rest and study, and to provide a place for people to find inner peace and spiritual support. Through this series of careful planning and design, the Yellow River Culture Park will become a comprehensive park integrating culture, leisure and recreation, providing an ideal place for cultural exchange.

III. ANALYSIS

3.1 Design strategies

3.1.1 Combing the history of the site

By systematically sorting out the history of Kaifeng City, the most representative elements of the Yellow River cultural characteristics of different periods are extracted and expressed by different artistic methods. These elements profoundly show the deep historical heritage and rich cultural connotation of the local area, so that people can understand and recognize the history and culture of Kaifeng City and the Yellow River in a more in-depth manner, enhance the cognition and pride of the regional culture, and inject new vitality into the cultural inheritance and development of the city.

3.1.2 Create cultural characteristics

Dig deep into the local characteristic culture, refine the unique cultural elements, and skillfully and organically integrate them with the park construction. Through well-designed landscape nodes, reproduce the essence of traditional culture and folklore, so as to trigger people's empathy and inspire their awareness of the protection of traditional culture. This design strategy not only helps to inherit and promote regional culture, but also enhances the cultural connotation of the park, making it a cultural education place with unique charm.

3.1.3 Construct functional layout

The overall style and layout of the park is effectively controlled through the construction of the spatial structure of "Axis, Functional Zoning, Detailed Design". In view of the specific needs of different sites and the usage habits of different people, the park's functional zoning planning is refined and the tour routes are reasonably organized to ensure that the spatial layout of the park is both beautiful and practical, meeting the needs of different people.

3.1.4 Preserving the ecological base

During the construction of the park, respecting the current ecological base and preserving the native plants are the primary principles in order to maintain the natural

ecological balance. In order to achieve this goal, hard paving should be minimized and permeable paving materials should be given priority to pave the necessary sites, thus preserving the status quo land on a large scale. At the same time, effective corrective measures need to be implemented for the problems existing in the existing ecological environment in order to protect and improve the natural environment of the park and ensure its sustainable development.

3.1.5 Engage the crowd

In the construction of the Yellow River Cultural Park, promoting crowd participation is key. The author believes that cultural activities, such as exhibitions, lectures and folklore performances, can be held frequently in the venue to attract the participation of citizens and tourists and enhance their interest in the Yellow River culture. Set up an interactive experience area to let visitors experience the charm of the Yellow River culture first hand. Committed to creating an open and inclusive cultural space, so that everyone can find a sense of cultural belonging and participation.

3.2 Site Introduction and General Information

3.2.1 Location

The Yellow River flows through nine provinces in China. Kaifeng, as a nationally important position for ecological protection and high-quality development of the Yellow River Basin^[12], has great potential for development. With the support of national policies, Kaifeng plans to build one of the 13 National Yellow River Cultural Parks planned in Henan Province. The project is located in Liyuankou Township, Kaifeng City, Henan Province, China.

Kaifeng City is located in the eastern part of Henan Province, on the banks of the Yellow River, and is one of the birthplaces of Chinese civilization. Longitude 113°52' 15" -115°15' 42" East, Latitude 34°11' 45" -35°01' 20" North. It is adjacent to the provincial capital Zhengzhou City in the west, connected with Shangqiu City in the east, bordering Xuchang City and Zhoukou City in the south and Xinxiang City across the Yellow River in the north. Kaifeng has a long history and is one of the famous

ancient capitals of China, having been the political, economic and cultural center of many dynasties.

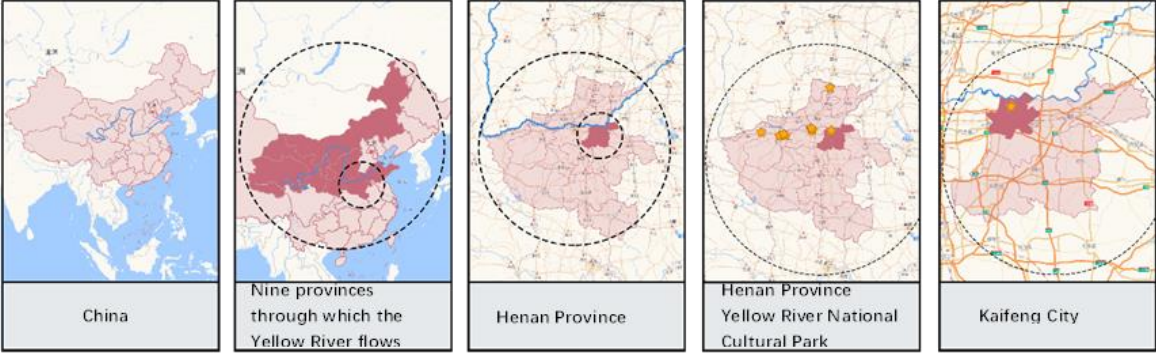


Figure. 6 Location of Kaifeng City / Author's Figure

3.2.2 Nature of land use

According to the green space system planning and Kaifeng City Master Plan and other superior plans, the Yellow River Culture Park is positioned as a comprehensive park in the urban construction land. Its main functions include cultural protection and inheritance, ecological environmental protection and restoration, science education and cultural experience, tourism and leisure and recreational activities as well as cultural exchanges and cooperation, as well as providing residents with a convenient way of access and the corresponding function of recreational green space, so as to satisfy the residents' daily leisure needs. This planning positioning not only reflects the multi-functionality of the park, but also highlights its important position in the urban green space system.

3.2.3 Climate Analysis

Kaifeng City has a temperate monsoon climate with four distinct seasons and obvious regional characteristics.

In spring (March~May), the climate is pleasant, the temperature gradually warms up, and it is rainy and windy, which is favorable for the growth and reproduction of plants. Summer (June~August) is hot and humid, with plenty of sunshine and high temperatures, often accompanied by showers and thunderstorms, and the meteorological conditions are suitable for the growth of crops. Autumn (September~November) is pleasant, moderate, sunny, with gradually decreasing

temperatures and a stable climate, suitable for a variety of outdoor activities. Winter (December~February) is cold and dry, with bone-chilling winds and low temperatures, and common snowfalls make for picturesque winter scenery, creating a romantic winter atmosphere (INT-13).

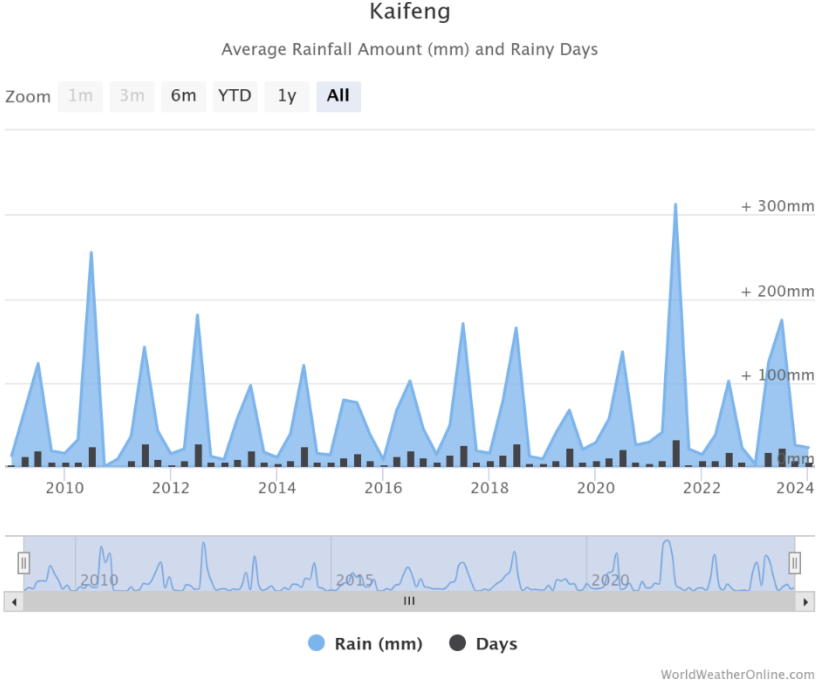


Figure. 7 Average Rainfall Amount (mm) and Rainy Days/ (INT-13)

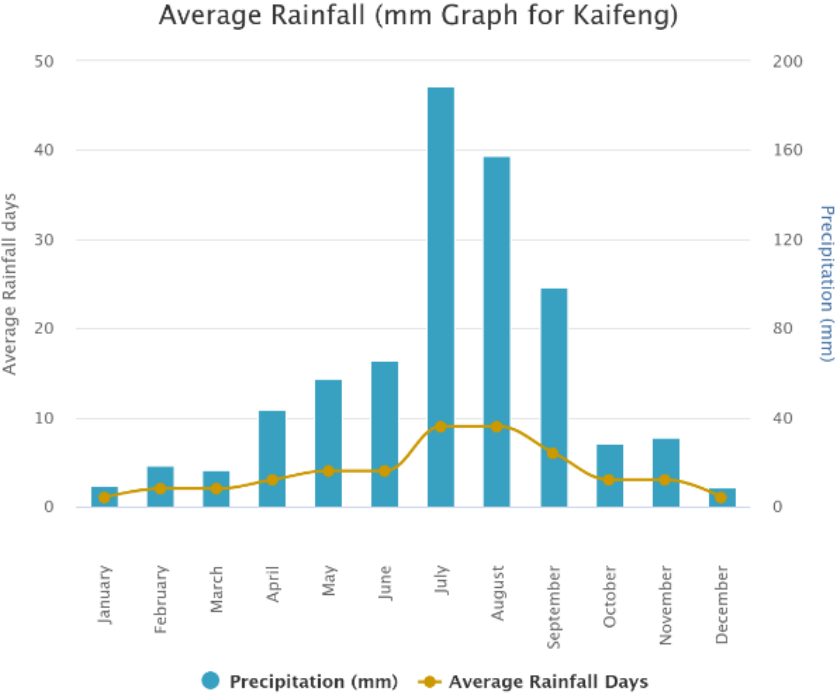


Figure. 8 Average Rainfall Amount (mm) and Rainy Days / (INT-14)

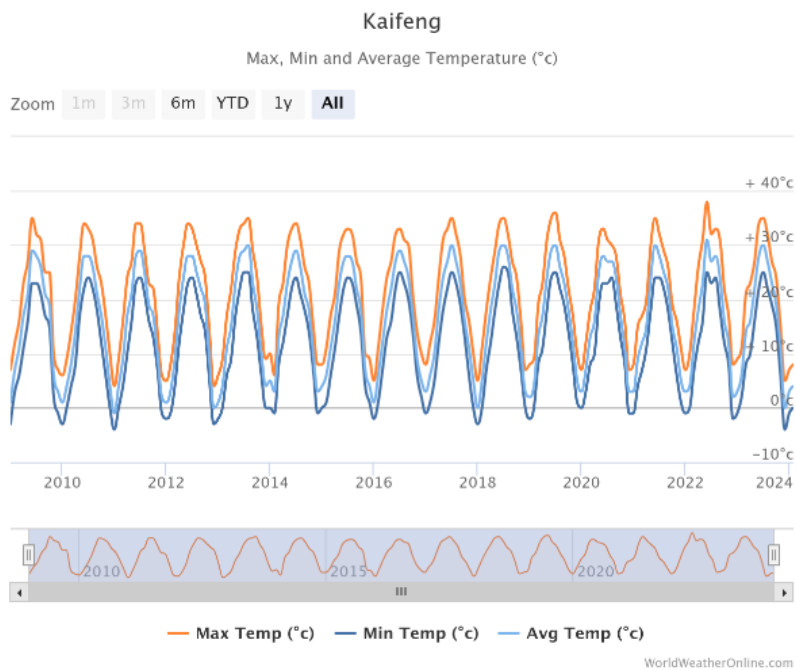


Figure. 9 Max, Min and Average Temperature (°C) /(INT-15)

3.3 Cultural Analysis

Kaifeng City, the ancient capital of eight dynasties with a history of more than 4100 years, has rich and diverse tourism resources, including history and culture, natural scenery or local characteristics.

3.3.1 Kaifeng Traditional Culture Analysis

Folk culture has always played an extremely important role in maintaining and promoting the harmonious development of the society, therefore, the research and inheritance of folk culture has also become the focus of people's attention^[11].

Kaifeng culture includes the creation of writing by Cangjie, Kaifeng Pan Drums, Kaifeng Needle Embroidery, Chrysanthemums, Song Dynasty Dian Tea, Calligraphy and Song Lyrics. Its intangible cultural heritage includes Bianjing Lantern Zhang, Kaifeng Pan Drum, willow weaving and Song Dynasty traditional kites. Kaifeng snacks include braised noodles, peanut cake, chrysanthemum cake, soup dumplings, fried cold noodles and Yellow River Carp.



Figure. 10 Kaifeng Drum /(INT-16)



Figure. 11 Chrysanthemum in Kaifeng, Henan / (INT-17)

3.3.2 Kaifeng Yellow River Cultural Analysis

The outstanding qualities of the Yellow River culture are reflected in its rich and diverse cultural types^[10]. In the rich cultural history of the Yellow River in Kaifeng City, many figures have appeared in the governance of the Yellow River, including Xia Yu, Shi Qi, Zheng Guo, Ji An Ji Ren, Jia Jean, Wang Jing, Wang Anshi, Song Yuchen, Jia Lu, Yu Qian, Pan Jixiang, Wang Ding, Lin Zexu, Li Yi Zhi, Feng Yuxiang, Wang Huayun, and Wang Weijing^[8].



Figure. 12 Analysis of the Yellow River Culture / (Gao shiqin,2023)

3.3.3 Kaifeng Tourism Resources Analysis

There are many famous attractions in Kaifeng City, such as Millennium city park, Kaifeng Mansion, Tieta Park, and Qifeng Furious Garden in Zhuxian Town, all of which are witnesses of history and culture. Qingming Riverside Garden is a large-scale historical and cultural theme park, built on the model of the Northern Song Dynasty painter Zhang Zeduan's "Qingming Riverside Drawing", showing the prosperous scene of Bianjing, the capital of the Northern Song Dynasty. Kaifeng Mansion, on the other hand, mainly showcases the political, judicial and cultural life of the Northern Song Dynasty. As a landmark of Kaifeng, the Tower still stands tall after a thousand years of wind and rain, and the brick carving art is a masterpiece of Song Dynasty brick carving art.



Figure. 13 Millennium city park /(INT-18)

3.4 Site Analysis

3.4.1 Design Scope

The project is located in Liuyuankou Township, Kaifeng City, and the site is in the shape of an irregular narrow triangular belt, with a plot area of about 16 hectares. The northern and western parts of the site are villages, and the Qingshui River, a tributary of the Yellow River, flows through the northern side of the site. According to the development plan of Kaifeng Municipal Government, the land suitable for the construction of parks and green spaces is designated as the project area.



Figure. 14 Site Scoping Plan / Author's Figure



Figure. 15 Construction status map / Photograph by the author

3.4.2 Traffic analysis

In the 15-minute living circle setting, the surrounding residential areas and clinics can be reached by walking from the site, the elementary school and the Yellow River ecological landscape area can be reached by bicycling, and the downtown area of Kaifeng City can be reached by driving to the west, and the Yellow River beach can be reached to the north. Kaifeng city has a perfect transportation network, such as a railway station, a high-speed train station and some highway entrances and exits, which form a more complete transportation system.

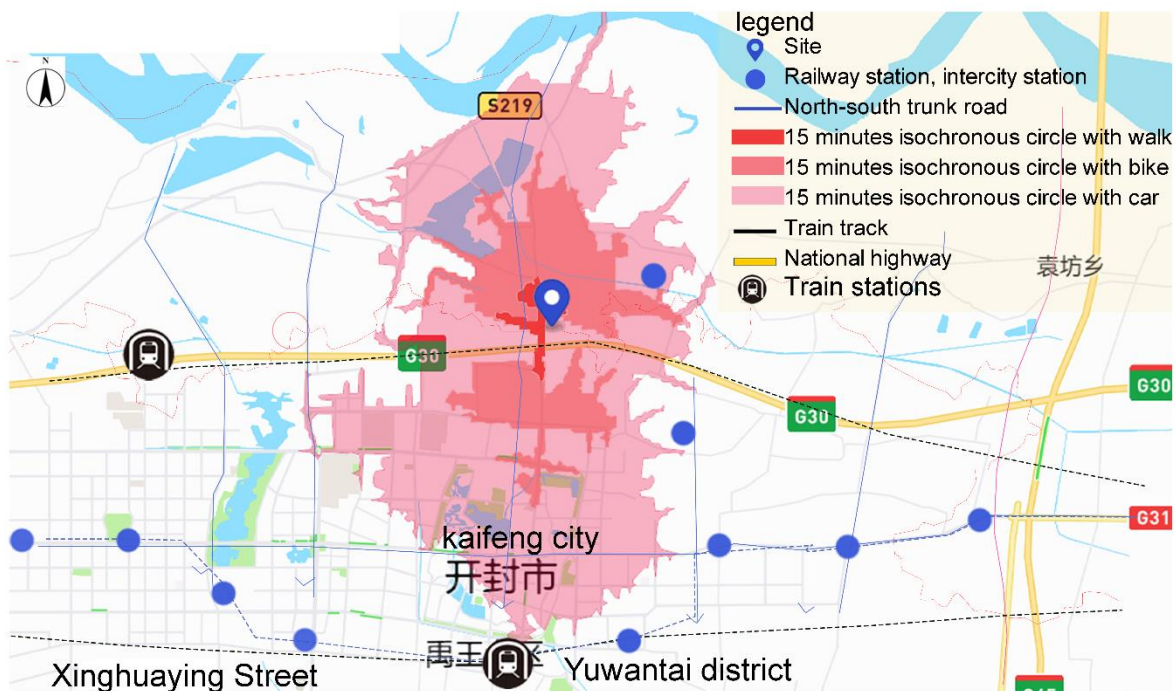


Figure. 16 Kaifeng City Transportation System Map / Author's Figure

In addition, the site is surrounded by a number of feeder roads. Although these feeder roads are not as spacious as the main roads, their presence provides more access options to the site and effectively relieves traffic pressure.

This can show that such convenient transportation conditions provide strong support for the development of the site, which not only facilitates tourists to come to visit, but also brings better development space for the construction and operation of the Yellow River National Cultural Park, and can also drive the economic prosperity of Kaifeng City.

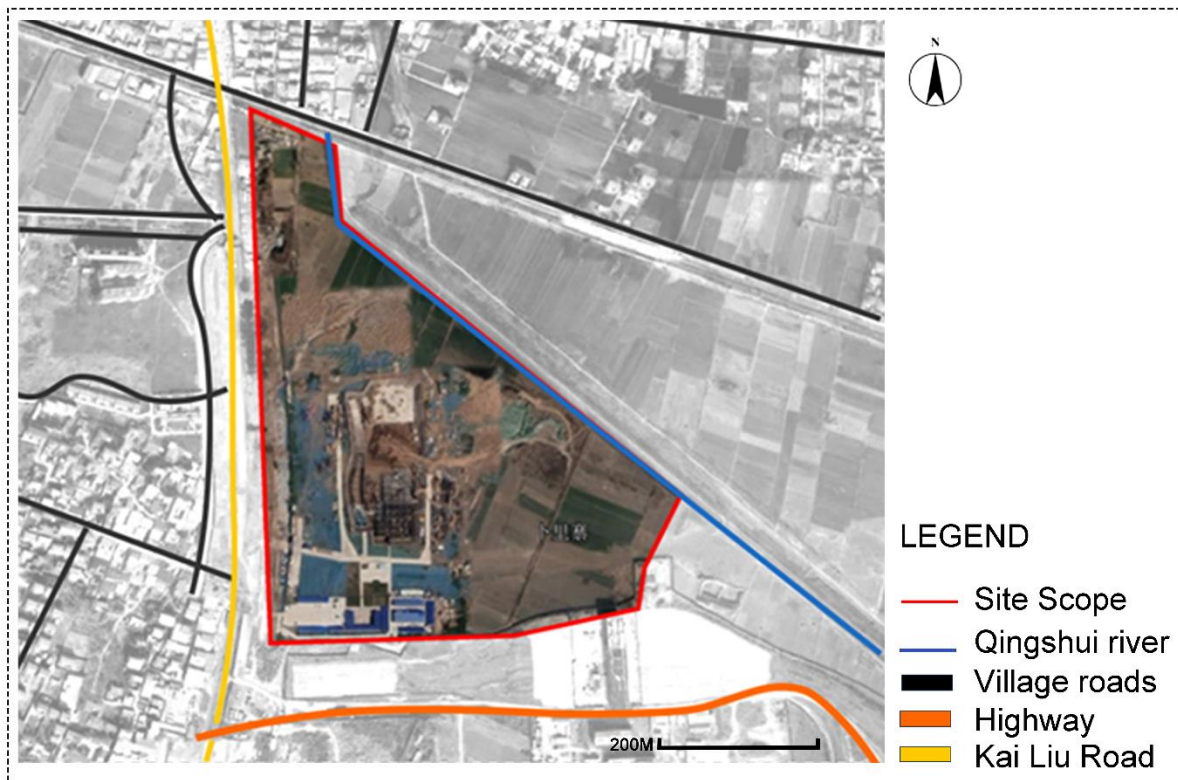


Figure. 17 Traffic analysis map around the site / Author's Figure

3.4.3 Elevation Analysis

The Yudong Plain, where the site is located, is situated in the southern flank of the large alluvial fan of the lower reaches of the Yellow River, and belongs to the Yellow River alluvial plain, which is formed by the Yellow River alluvial deposits and has a loose texture. The elevation ranges from 69 meters to 86 meters. It has flat terrain, deep soil layers, good soil quality and stable structure, which is favorable for the cultivation of various crops and cash crops, and high forest cover. The elevation of the

design site is 75 meters on average, and the terrain is relatively flat. The advantage is that the flat terrain can make the design and construction process simpler, as there is no need to consider too much terrain adjustment work, on the contrary, if the design plan requires digging trenches or creating micro-terrain and other situations, the elevation design of the site has to be considered.

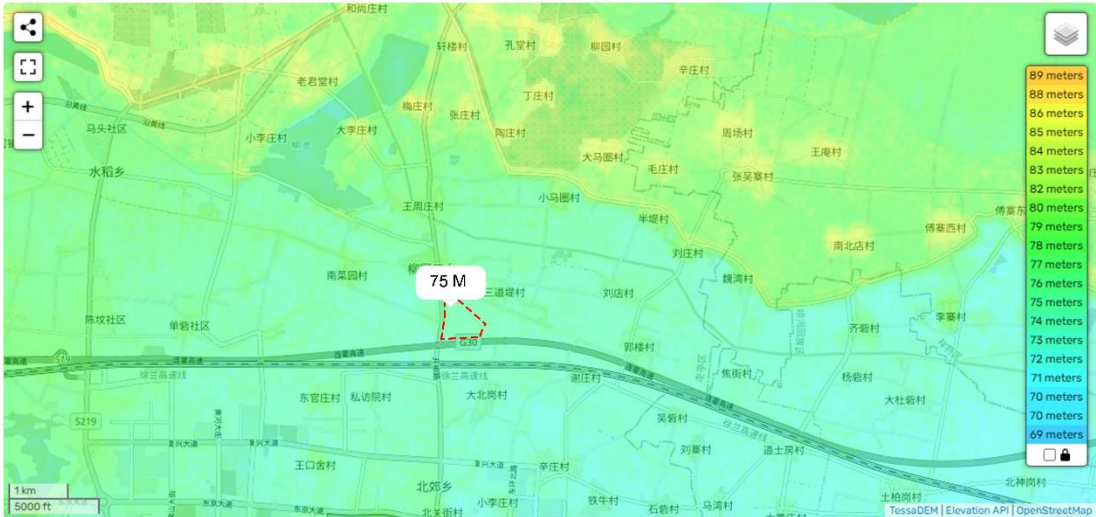


Figure. 18 Site Elevation Map / (INT-19)

3.4.4 Building Analysis

Different land uses are distributed around the site, including agricultural land, rivers, residential land, logistics land, transportation land, etc. Among them, the building types of the residential area are mostly 2~3-storey villas or bungalows in the style of gray tiles and beige walls, mostly 200~400 square meters, one-storey bungalows and red-bricked tiled houses are rare, and half of the one-storey bungalows are with a gable, and are not in the simple form of a square cubic shape.



Figure. 19 Surrounding Building Types / Author's Figure

3.4.5 Vegetation Status

During the construction phase, the existing vegetation on the site was relatively sparse, dominated by a few trees and low shrubs. Due to the lack of effective management and maintenance, a large area of the site was left barren, with overgrown weeds and scattered garbage and piles of soil everywhere. This situation affects the overall aesthetics of the site.



Figure. 20 Existing vegetation / Photographs by the author

3.4.5 Existing problems with the site

In the process of designing the Yellow River National Cultural Park in Kaifeng City, the current situation of the site was analyzed in depth, and it was found that there were problems of imperfect tourism management plan as well as lack of or insufficient functions of the attractions. Around the site, there is a lack of some commercial type buildings, such as hotels and restaurants. In the long run, this may affect the browsing experience of tourists.

During the design process, an in-depth analysis of the current status of the site revealed the poor condition of the park's ecological environment and green space system. Specifically, the site's sparse green vegetation and lack of effective ecological barriers have led to dusty conditions and worrisome air quality. The soil piles are due to construction legacy, garbage accumulation or other reasons, but in any case, they are a form of damage and pollution to the park environment.

The site is surrounded by convenient transportation, which provides visitors with easy access to the site. However, there is currently a lack of sufficient supporting parking lots around the site, which undoubtedly brings inconvenience to visitors' parking and restricts the reception capacity of the site. In addition, due to the existence of some village roads around the site, muddy dirt roads still exist in some areas, which not only affects the walking experience of tourists, but also destroys the overall aesthetics of the site. In order to enhance the service level and environmental quality of the site, it is necessary for us to give full consideration to the planning and construction of the parking lot in the design, and at the same time to strengthen the improvement and enhancement of the surrounding roads, so as to provide tourists with a more comfortable and convenient visiting environment.



Figure. 21 Analysis of existing problems / Author's Figure

3.4.6 Use and user

Using on-site research and questionnaires, we analyzed the needs of 100 people around the site, including tourists, residents, and workers, and came to the conclusion that 65% of residents think the park needs space for socializing, cultural education, and exercise; 25% of tourists think the park needs space for cultural education, relaxation, and photo taking; and 10% of workers think the park needs space for repairs and maintenance, and a center for visitor services. 10% of workers think the park needs space for repair and maintenance and visitor service center. According to the different needs of different groups of people, we can better design a park that serves people.

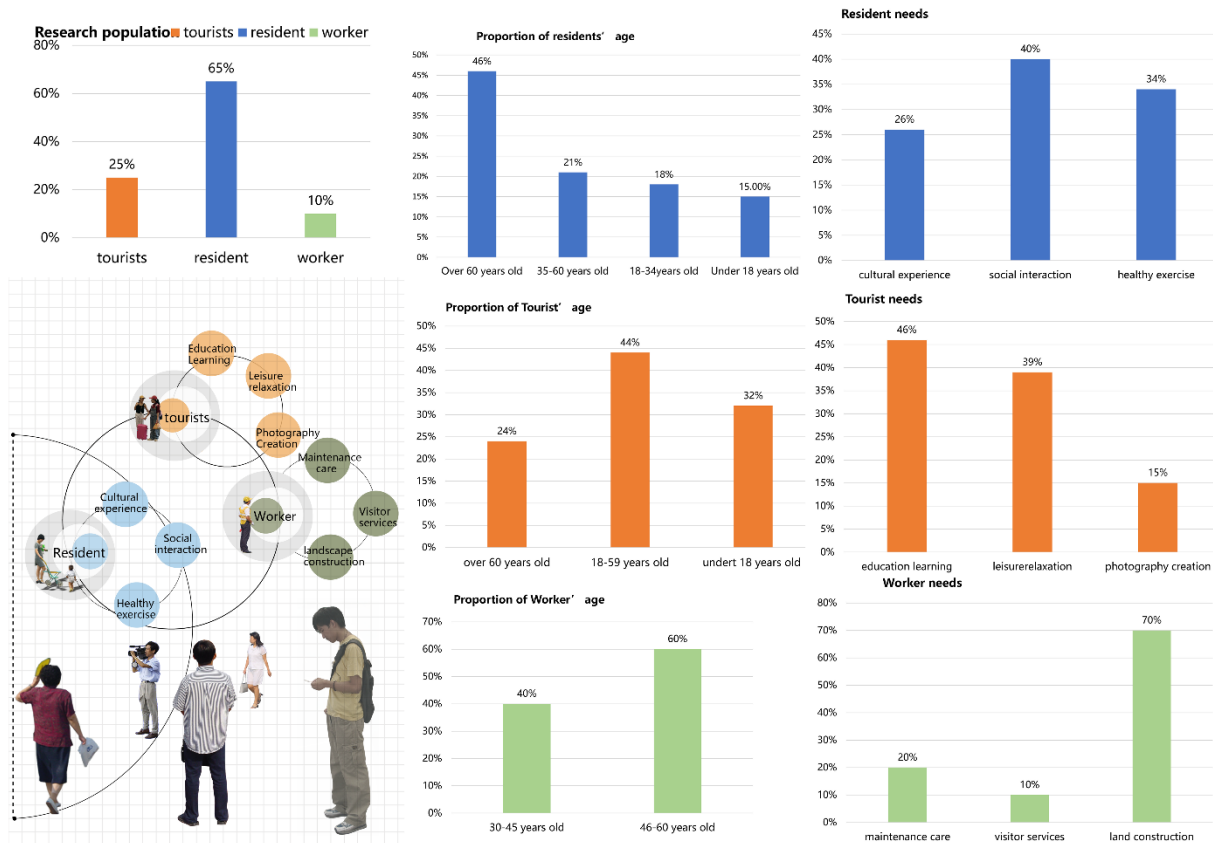


Figure. 22 Requirements analysis / Author's Figure

3.4.7 SWOT Analysis

The government has introduced a number of policies to support the construction of the Yellow River National Cultural Park, and it is also close to the entrance and exit of the highway, with convenient transportation.

Lack of necessary public facilities and service centers, and lack of changes in the topography of the site.

The site is rich in natural beauty and cultural elements, which can be used to attract tourists. New public spaces and activity centers can be provided.

For the site, the close proximity to the highway entrances and exits creates high traffic volumes and traffic safety issues. For economic development, the value of agriculture around the site is affected.

IV. DESIGN VISION

4.1 Design goals

In terms of cultural display and inheritance, through the skillful use of landscape design techniques, it aims to highlight the deep heritage of the Yellow River culture and the unique charm of Kaifeng's historical heritage. By creating this cultural and educational venue, it not only enhances the public's understanding of and pride in the regional culture, but also promotes cultural inheritance and development.

In terms of community interaction and recreation, multi-functional open spaces have been carefully designed with the aim of encouraging active participation of community members in cultural exchanges and meeting the leisure and recreational needs of different groups of people. These spaces will be ideal places for community members to meet, exchange ideas and share the joys of life.

As for the ecological aspect, it is committed to realizing the environmental, social and economic sustainability of green space design. Through the use of environmentally friendly materials and technologies, we will ensure the feasibility of long-term maintenance and management of the green spaces, thereby providing the public with an ecological environment that is pleasant to live in and visit.



Figure. 23 Design goals / Author's Figure

4.2 Design program

4.2.1 Knowledge+exhibition space

In the design of the Kaifeng Yellow River National Cultural Park, the cultural and educational area carries the important functions of displaying the Yellow River culture, promoting the dissemination of knowledge and the exchange of innovative ideas.

First of all, in terms of spatial layout, Kaifeng's long history and unique Yellow River culture are presented in an intuitive and vivid form by setting up thematic display areas and interactive experience areas. This not only enables citizens and tourists to naturally understand and learn about the Yellow River culture during their visit, but also stimulates their curiosity and desire to explore.

Secondly, focus on the collection and dissemination of innovative ideas. By setting up other methods such as creative display walls, citizens and tourists are encouraged to share their creativity and ideas to promote the exchange of knowledge and innovation. Such a design can not only stimulate citizens' innovative thinking, but also inject new vitality into the city's cultural development.

Lastly, building diverse stages is also key. These platforms can be used for organizing all kinds of cultural activities, such as concerts and drama performances, providing a platform for citizens to display themselves and exchange ideas. At the same time, through colorful cultural activities, they can also attract more people to participate and further promote the prosperity and development of culture.



Figure. 24 Inspiration maps for cultural spaces / (INT-20)

4.2.2 Nature+green heart

The first priority is to promote a sustainable way of living, led by an ecological design approach. In planning green eco-zones, emphasis will be placed on the protection and restoration of the natural environment, skillfully incorporating natural elements such as vegetation and water bodies in order to build a harmonious ecosystem. In addition, the use of environmentally friendly materials and advanced technologies will be utilized in an effort to minimize negative impacts on the environment.

Secondly, the area will provide a rich eco-lifestyle landscape that will serve as a bridge for citizens to come into contact with nature. Lush vegetation, clear water features and thoughtful recreational facilities will create a resting place for citizens to get close to nature. At the same time, the design will also aim to create diverse landforms and landscapes. Through well-designed topography, vegetation configurations and landscape nodes, citizens will be able to enjoy a unique spatial experience as they explore different landscapes.

The ultimate goal is to make this green eco-region a self-sufficient green ecosystem. With the help of eco-design concepts and sustainable practices, the area will promote biodiversity conservation and natural restoration, resulting in a healthy and stable ecological environment.



Figure. 25 Inspiration maps for nature spaces /(INT-21)

4.2.3 Fitness+sports center

When designing the Yellow River National Cultural Park, we emphasize the introduction of fully functional green infrastructure, and provide a comfortable and pleasant environment for tourists through a scientific and reasonable layout. At the same time, we highlight the interactive and participatory nature of the park and set up a rich variety of cultural activities and experiential programs so that visitors can deeply understand and feel the charm of the Yellow River culture. In addition, it is necessary to fully consider the diversified uses of the site, and meet the needs and expectations of different visitors through flexible and varied spatial design. Ultimately, it is committed to making the park an activity center for the surrounding community, providing residents with an important place for recreation and cultural exchange.



Figure. 26 Inspiration maps for fitness spaces / (INT-22)

V. DESIGN PROPOSAL

5.1 Bubble diagram

When carrying out the design, we strive to meet the needs of residents and tourists, and set up a large parking lot on the south side of the site adjacent to the exit of the highway to meet the parking needs of the visiting crowd. At the same time, an ecological landscape area is designed on the north, south and east sides of the site, which has the function of isolating noise and dust. Meanwhile, in the middle of the site, it is planned to be a cultural and educational area, adjacent to the Yellow River Cultural Exhibition Center under construction, while near the village, it is designed to have some resting and exercising areas to meet the needs of the residents.

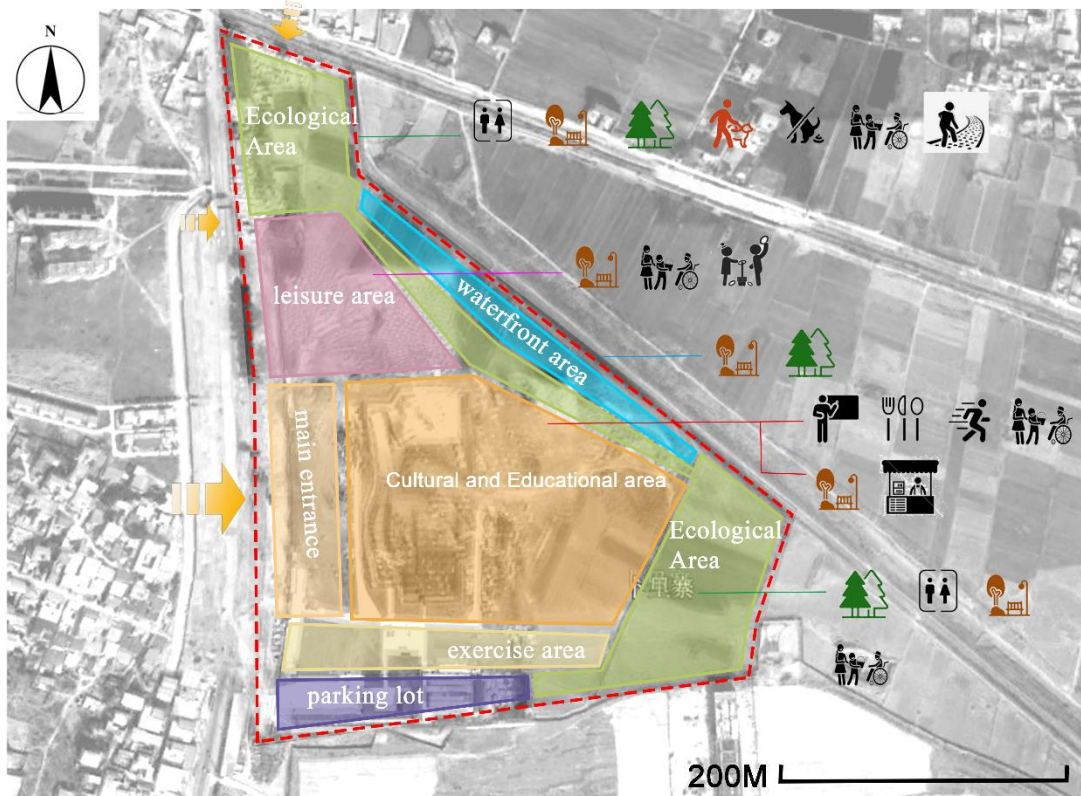


Figure. 27 Bubble diagram / Author's Figure

5.2 Master plan

In the site plan design, a main entrance and two secondary entrances are designed on the west side, and in the fence design on the west side, the main use is to utilize the arbor as an open fence form, which is convenient for people to enter and exit freely. The main entrance plaza mainly adopts a regular structure, which gives the main entrance plaza a solemn and formal atmosphere. This design makes the square visually present a balanced and symmetrical aesthetic.

In the pattern design of other spaces, the arc or curve design form is mainly used. First of all, the design form of arcs or curves gives the landscape a flowing and dynamic aesthetic. Through the use of curves, it can create a natural, harmonious visual effect, so that when visitors walk in the park, they can feel a relaxed and pleasant atmosphere. This design makes the park no longer stick to one form, but full of dynamic. Secondly, the design form of arcs or curves can be better integrated into the natural environment, because in the site, the layout of roads, water bodies and other elements need to be guided by curves to guide the visitors' sight and walking direction.

Below is a detailed description:



Figure. 28Master plan / Author's Figure

Number ① is the main entrance square, which contains a main axis leading to the main entrance of the exhibition hall, on the left and right sides of the main axis, there are designed lawn green areas, and some outdoor seats will also be placed here, which is convenient for the residents or visitors to take a rest here. On the lawn, there is also a

path made of stone, which can lead to some sculptures and cultural display boards placed on it for people to read and learn about the Yellow River culture here. On the north side of the main axis, a small resting area is designed, which also serves as a connection with the secondary entrance, making it convenient for people from different directions to enter the park.

Number ② is the cultural square, which occupies the main position of the whole site, has multiple functions and is a relatively comprehensive area. It contains a lawn green area, a sparse forest area, a cultural and folklore exhibition area, and an outdoor mini-theater. In the lawn area of the upper and lower sides, the design of the two arcs of the rest platform, which uses the water flow form, looks more dynamic sense, its function is to show culture, where placed some equipment can be used to hang cultural posters, some commemorative sculpture of historical figures and so on. At the same time from the rest platform can be extended to the sunken small theater, in the middle of the theater, it can be provided for the band to play music, or for some folk performing artists to perform, also can hold some calligraphy exhibitions or about the Yellow River culture of small-scale art and folk exhibitions. In the line of sight, from the entrance of the east side of the exhibition hall, a small square is set up as the connection with the cultural square, which can also be used as an emergency distribution square.

Number ③ is the leisure area. This area is also irregularly shaped and consists of a lawn of various shapes, a linear pond, a small resting gallery, and a relatively large indoor space. This building exists as an area for selling souvenirs. The linear pool flows from the small fountain plaza on the north side to the main plaza on the south side, while four resting benches are placed under the gallery of the main plaza. The dynamic pool, the souvenir store and the large amount of green space can attract residents or tourists to rest or spend money in this area, and give people a relaxing and pleasant mood.

Number ④ is the exercise space. The design is divided according to different age groups. For children, there are some equipment suitable for them to play sports, such as slides, teeter-totters, bars and other equipment, while for adults, they need an area where they can exercise, such as a court and a circular track. In terms of form, the

circular design element is used evenly, and in the two different age groups' exercise areas, not only is the circular running track used to connect, but also a small footbridge is used, so that when people walk to this area, they can see farther away. In the choice of color, because the Yellow River water is no longer clear due to the terrain, but mainly yellow, in this area, the yellow color of the Yellow River is used, so that it also has the elements of the Yellow River culture.

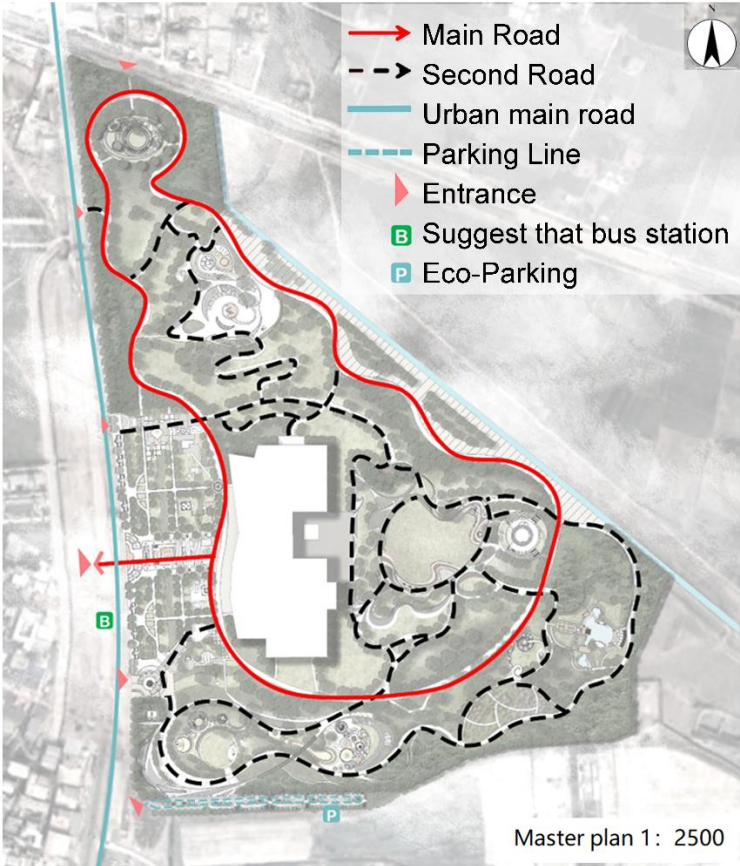
Number ⑤ is the ecological area. This area is more based on planting to create some natural ecological landscape. In the selection of tree species, priority is given to some native species of Kaifeng city, and some drought-resistant and cold-resistant plants are selected. On the east side of the site, a small irregular pool is designed, and a small building is designed beside the pool, which can be used for viewing and resting, and is open to the crowd for free.

Number ⑥ is the waterfront terrace. As it is adjacent to the Qingshui River, it can be used to view the water in the summer when the water is plentiful, and it can still be used as a resting platform in the dry season, providing a good place for people to get close to nature and relax.

Number ⑦ is a parking lot. In the choice of pavement, choose some more ecological grass tiles and permeable tiles, to create an ecological parking lot, reduce the proportion of hard pavement, thereby increasing the greening rate. In the parking lot designed a wider entrance and exit, room door people can enter directly into the park, do not need to detour to the main entrance into the park.

5.3 Traffic System

The design of this park has taken into full consideration the daily use needs of the residents, therefore one main entrance and two secondary entrances have been set up to facilitate convenient access for the residents in the neighborhood. In response to the concept of green travel, a transportation station has been specially planned on the east side of the park, aiming at encouraging visitors to choose public transportation to come and play, which not only reduces traffic congestion, but also expands the service scope of the park. At the same time, in order to ensure the safety and comfort of visitors, the park has implemented a strict pedestrian-vehicle segregation system to ensure the tranquility and safety of the walking space, creating a comfortable and pleasant environment for visitors to the park. Meanwhile, a hall parking lot is designed on the south side to meet the parking demand.



Parking location	Vehicle	Bus	Bike
south side of site	200	30	300
East side of site	20	0	100

Figure. 29 Traffic System / Author's Figure

5.4 Cultural events

With the alternation of seasons, the natural landscape of the attractions and the tourists' needs will show significant differences. Therefore, when planning the activities of the attractions, the seasonal factors must be fully considered to ensure that the content of the activities and the natural landscape of the attractions to meet the needs of tourists in different seasons.

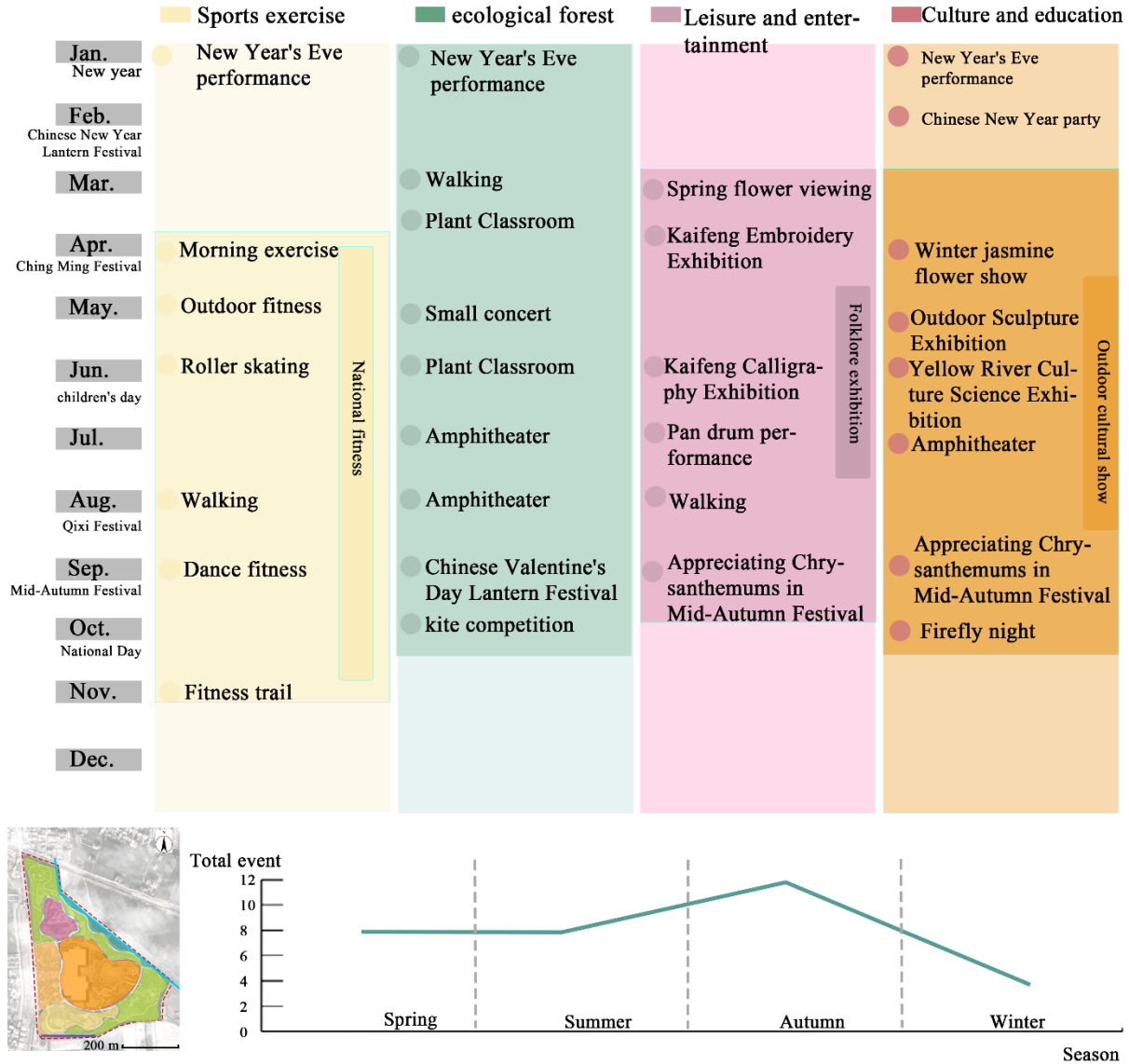


Figure. 30 Main activities during the four seasons / Author's Figure

In the spring, the attraction can organize a series of small outdoor activities, such as kite flying, spring flower exhibition, Yellow River Chorus and plant classes. These activities can not only make full use of the natural landscape in spring, but also allow

visitors to participate in the process of feeling the breath and vitality of spring. At the same time, through a reasonable spatial layout, such as setting up a special activity area and rest facilities, can further enhance the tourists' experience.

In summer, the hot weather makes tourists more inclined to look for cool places to avoid the summer heat. Therefore, in shady ecological areas, such as calligraphy exhibitions and pan drum competitions. These activities not only provide visitors with a cool environment to escape the summer heat, but also allow them to enjoy the artistic performances and feel the charm of Chinese culture at the same time.

Autumn is a good time to appreciate chrysanthemums. Attractions can organize chrysanthemum-appreciation activities, folklore exhibitions, etc., so that tourists can gain a deeper understanding of Kaifeng's folk culture while enjoying the autumn scenery. The attractiveness of the activities and the participation of tourists can be further enhanced through reasonable spatial layout, such as cultural display areas and outdoor mini-theaters in cultural and educational areas.

Winter is cold, but it also has a unique charm. In this season, attractions can organize some Chinese New Year activities, which not only allow visitors to find fun in the cold winter, but also enhance the attractiveness of the attractions through the unique landscape and spatial layout.

5.5 Main Activity Type

In the overall planning and layout of the park, the setting of the functional zoning of activities is particularly critical, and the cost of inputs varies according to the functional characteristics of each area. Among them, the active area, as a place full of vitality and vigor in the park, its design and construction are focused on meeting the diverse activity needs of visitors. In this area, visitors can fly kites and enjoy the feeling of freedom; jogging and fitness, enjoying the fun of sports; and walking dogs with pets, enjoying the intimate time with pets. In contrast, the quiet area attracts visitors with its tranquil atmosphere and beautiful natural landscape. Here, people can lay picnic mats and enjoy the harmony between food and nature; take a leisurely stroll and feel the intimate contact with nature every step of the way; and observe nature quietly to relax and purify the mind. Through careful planning and design, the active and quiet areas of the park complement each other, providing visitors with a rich variety of activity spaces and leisure experiences.

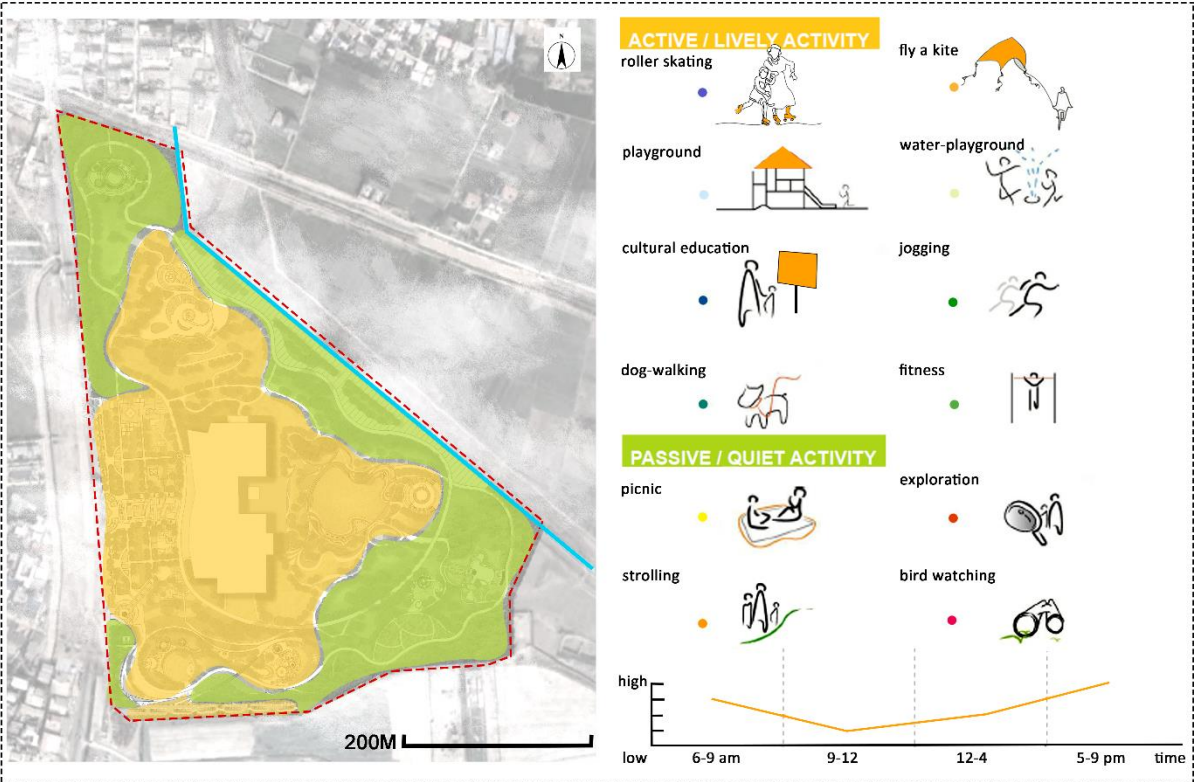


Figure. 31 Main Activity Type / Author's Figure

5.6 Planting Master Plan

In the selection of plants, dense forest areas are planted with more evergreen trees, deciduous trees, shrubs and grassland vegetation. Trees are usually chosen to be 5-8 meters high and shrubs 0.5-1 meter high. In the choice of tree shape, more umbrella-shaped and spherical, etc., most of the blooming color for the white, pink, red, etc., recommended the planting of a number of white pine, ginkgo, French paulownia, Viburnum, Ziyè Li, cherry blossoms, roses, Hai Tong, nanmu, large-leaved poplar, phalaenopsis orchids, and so on.

In the sparse forest area, the planting is based on the principle of trees and shrubs. Some deciduous trees and herbaceous plants are selected, and most of the trees are about 6-8 meters high, so that visitors can move freely under the trees without blocking the line of sight. In the choice of tree shape, more umbrella-shaped, recommended species: ash, acacia, lilac, paving cypress, weeping cypress, weigela, multiflora rose and so on.

In the lawn area, more planting some herbaceous plants. Lawn varieties can be chosen such as zoysia, Bermuda grass, Kentucky bluegrass and so on. They usually range from a few centimeters to tens of centimeters and are regular shapes such as rectangular or round. They need to be mowed, watered and fertilized regularly.

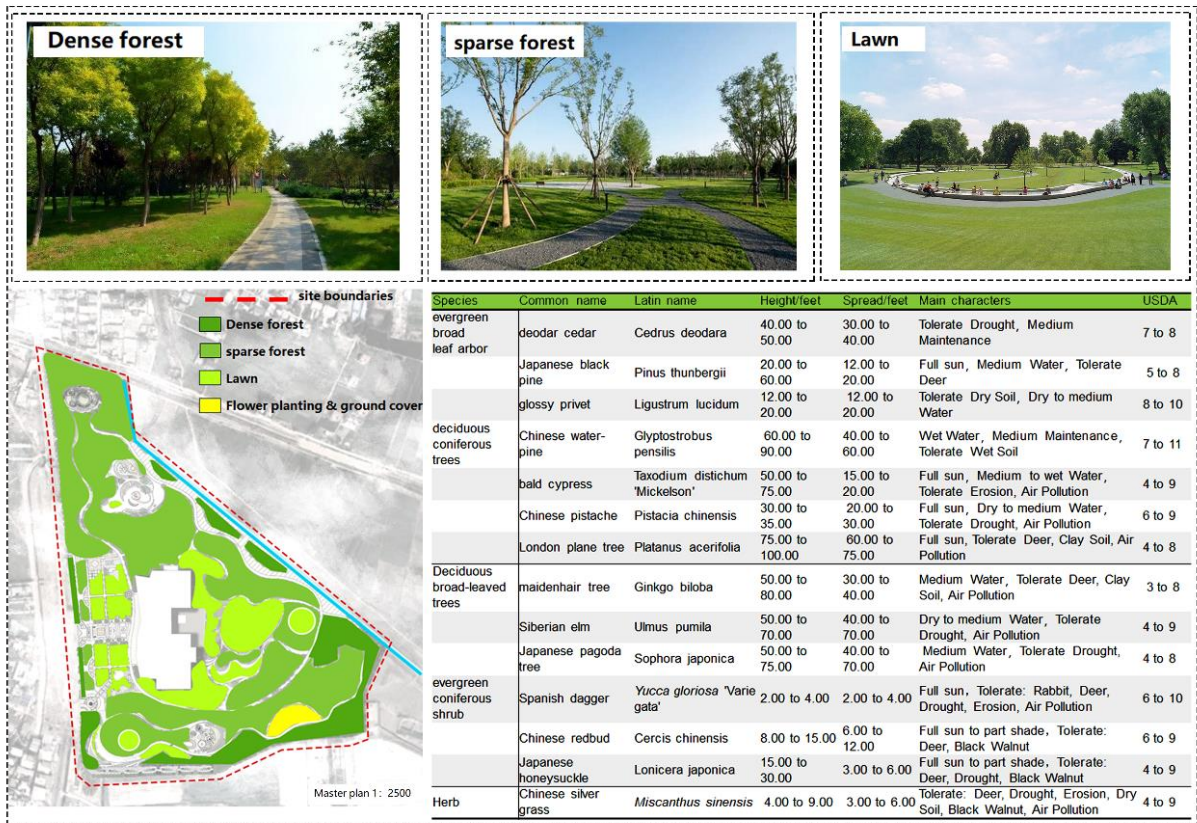


Figure. 32 Vision for Plant Growing / Author's Figure

Plants Monthly Landscape Characteristic Color Palette

Month: 1 2 3 4 5 6 7 8 9 10 11 12

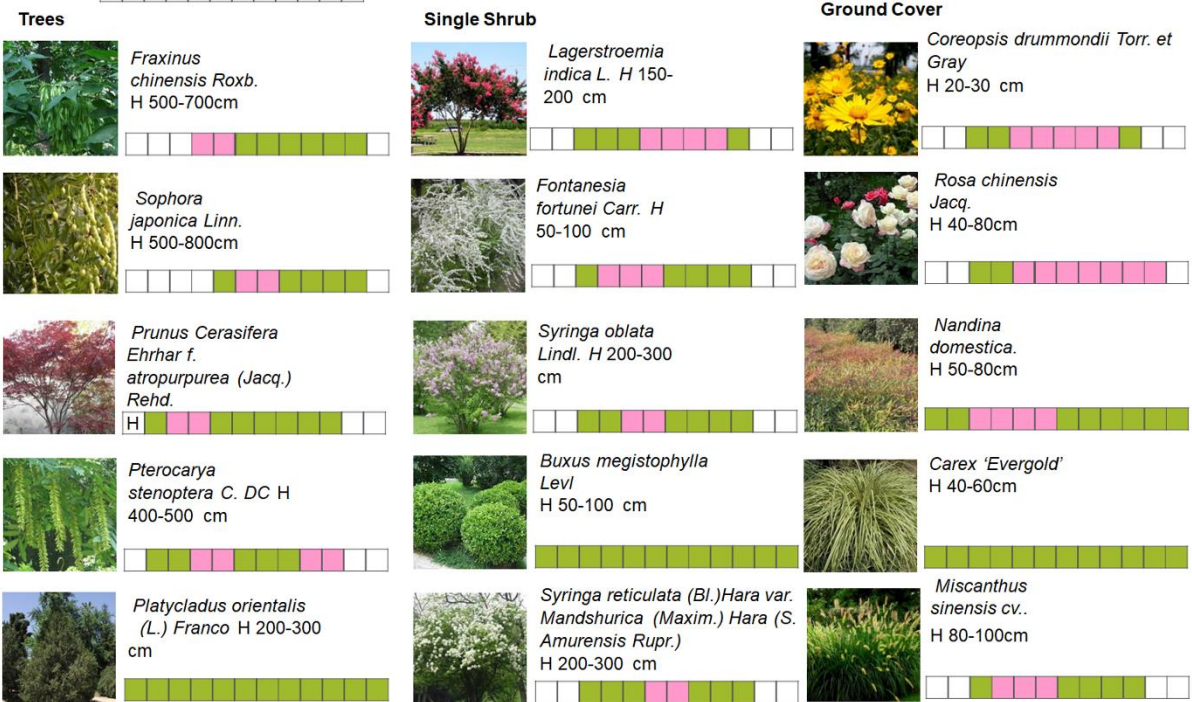


Figure. 33 Main plantings / Author's Figure

VII. DETAILED DESIGN EXAMPLES

In the overall planning of the park, the three key areas - the main entrance plaza area, the outdoor theater area and the recreation and exercise area - each carry unique functions and significance, and need to be finely tuned to meet the diverse needs of visitors.

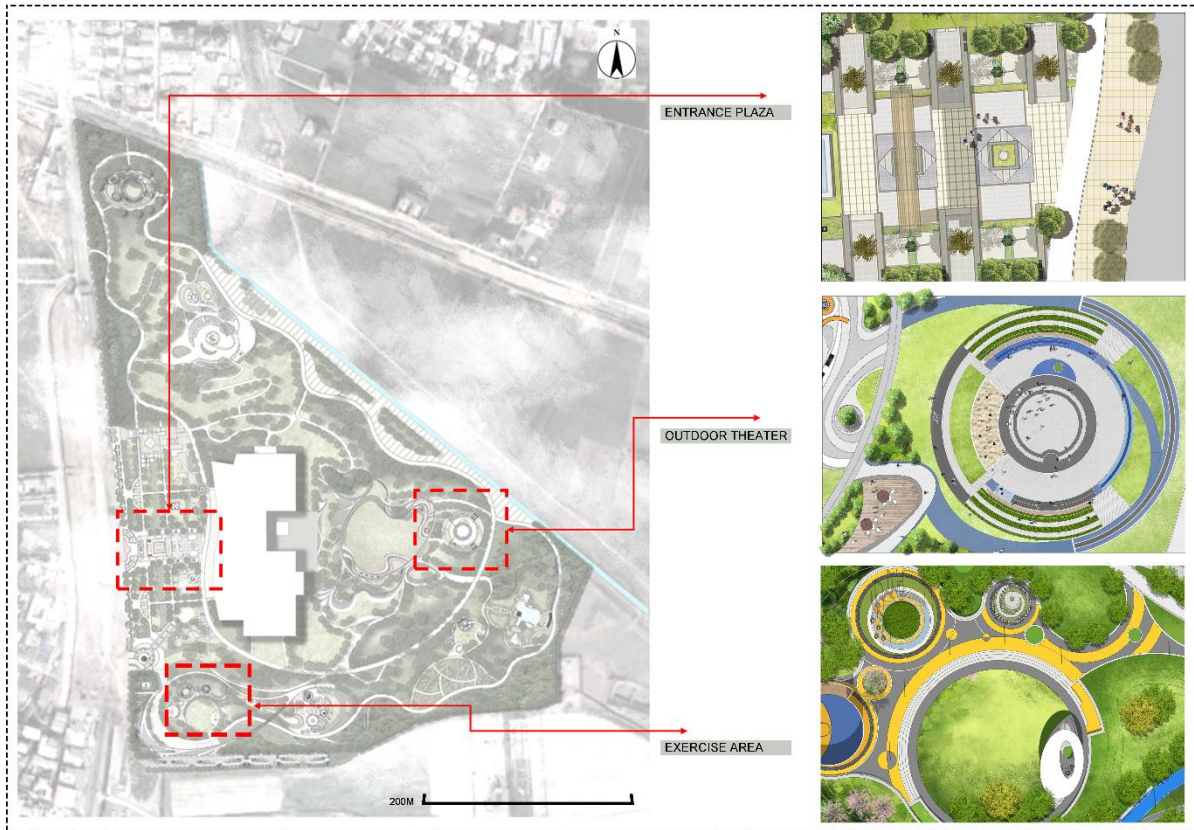


Figure. 34 Detailed design master plan / Author's Figure

6.1 Main entrance plaza

The main entrance plaza adopts a regular design, incorporating sculptures related to the Yellow River culture. These sculptures show the splendid history and rich culture of the Yellow River basin. The regular layout of the square will provide a neat and orderly environment for visitors, and at the same time with the decoration of the Yellow River culture sculptures, it will make the square more distinctive and culturally connotative, and enhance the knowledge and understanding of the Yellow River culture. In the selection of plants, some *Fraxinus chinensis* Roxb , Paulownia tree, *Cerasus* ssp. and *Cerasus* ssp. are planted. In the selection of materials, local materials such as bricks and concrete are prioritized and connected to the greenway that serves as a transportation link.

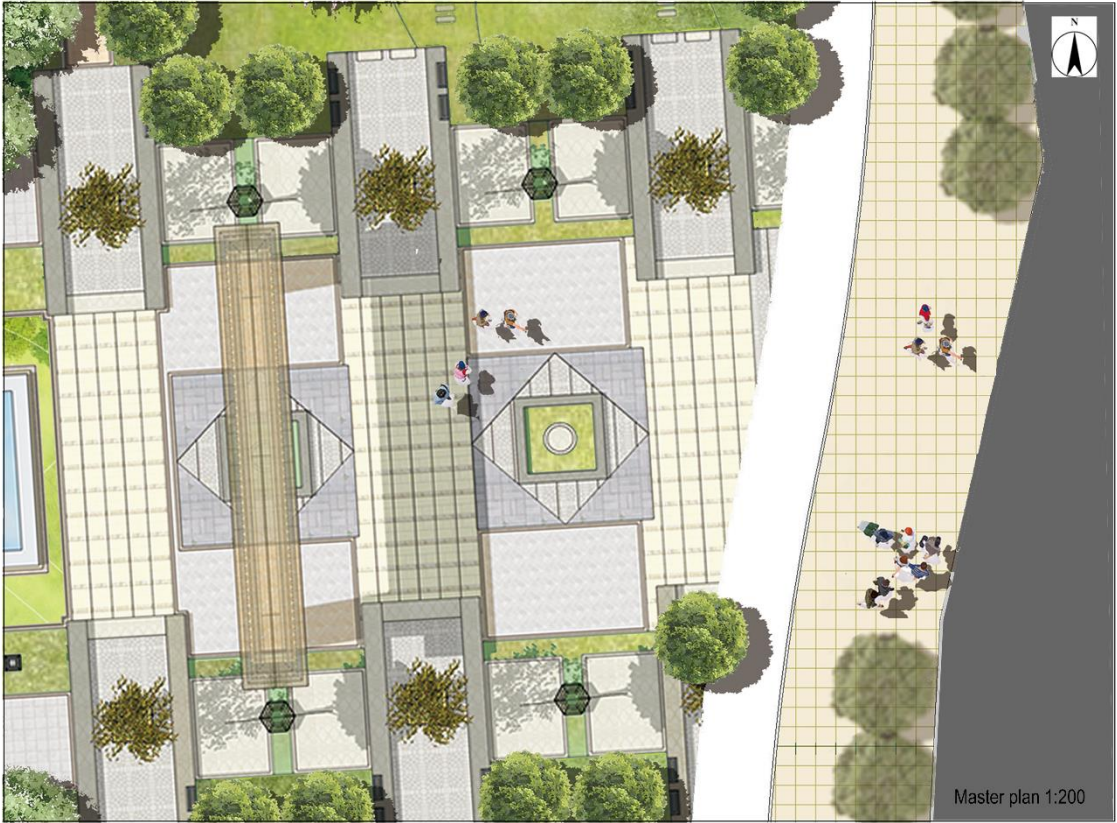


Figure. 35 Main Entrance Plaza Master plan 1:200 / Author's Figure



Figure. 36 Main entrance plaza design / Author's Figure



Figure. 37 Visualization of the main entrance plaza / Author's Figure

First of all, at the main entrance, a stepped flower bed and a stone were placed, and the name of the park was engraved on the stone. Some perennial plants were planted

in the flower bed, and some common native tree species were planted on both sides of the bed, such as *Fraxinus chinensis* Roxb. and other plants, so as to make it possible to have landscapes to look at all seasons of the year.



Figure. 38 Visualization of the main entrance plaza / Author's Figure
Next is a small cultural display area on the south side, where the walls are inscribed to show the folk culture of Kaifeng or the Yellow River culture, and where plants are planted to provide a shady place for visitors.



Figure. 39 Visualization of the main entrance plaza / Author's Figure
Then there is a small rest plaza, in which steps are used to create a study area, a sculpture is passed out in the form of a scroll, and some outdoor seating is placed around it to provide visitors and villagers with a place to communicate and relax.

6.2 Outdoor theater area

In the cultural and educational area, the model of an amphitheater is adopted, providing an ideal place for organizing various cultural activities. Activities such as calligraphy exhibitions and chrysanthemum exhibitions can be held here, allowing tourists to feel the charm of culture and art in the natural environment, skillfully combining the Yellow River culture with the natural landscape, and enhancing the cultural experience of tourists. The purpose of organizing these activities in this area is to enable tourists to feel the unique charm of culture and art in the embrace of the natural environment.

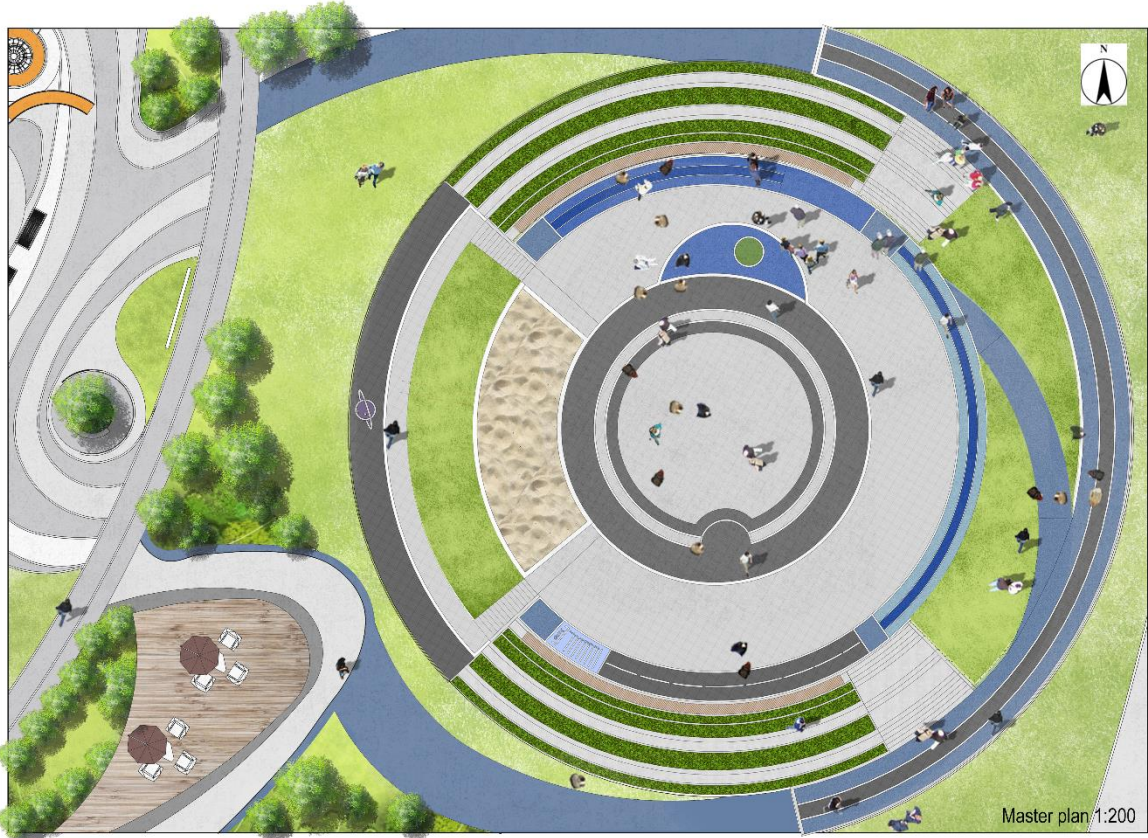


Figure. 40 Outdoor theater area master plan 1: 200 / Author's Figure



Figure. 41 Main outdoor theater area design / Author's Figure



Figure. 42 Visualization of the outdoor theater area / Author's Figure

As you can see in this visualization, this circular sunken theater gives a site for the presentation of cultural events, where people can freely walk around the square, or sit on the steps or lie down on the lawn to rest.

6.3 Recreational and exercise areas

In the exercise area, aerobic exercise equipment and stretching equipment are set up according to the needs and fitness goals of different groups of people, providing visitors with a comprehensive range of fitness options. Meanwhile, spacious and comfortable resting pavilions are also designed to provide visitors with shade and resting places, where they can relax, interact with others, and experience a pleasant fitness experience. This design not only promotes the popularization of healthy lifestyles, but also enhances the overall healthy atmosphere of the park.



Figure. 43 Recreational and exercise areas 1:200 / Author's Figure

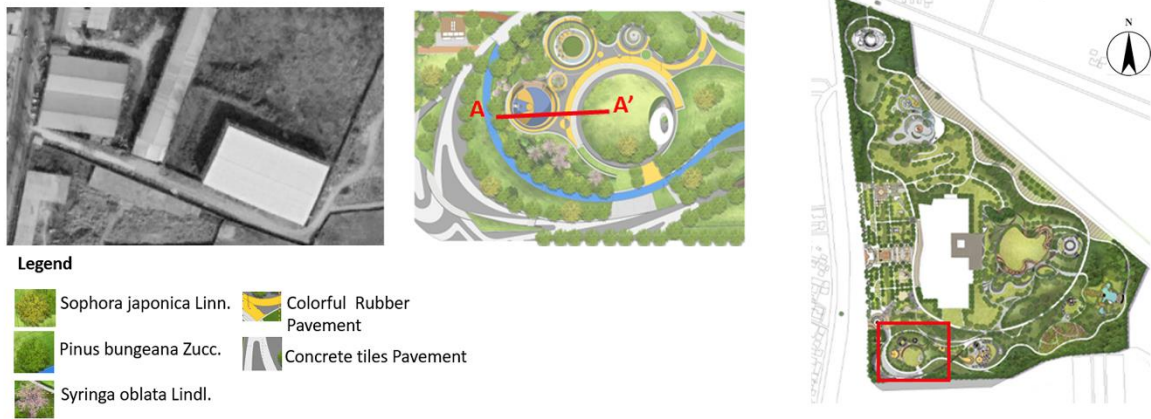


Figure. 44 Main Recreational and exercise areas design / Author's Figure



Figure. 45 Visualization of the Recreational and exercise areas / Author's Figure

This picture shows a court placed according to the needs of different age groups according to their needs. In this site, instead of placing a standard basketball court,

there is a round court that utilizes an iron fence as a safety barrier to keep people safe inside and outside the court. At the same time, on the right side of the court, some fitness equipment is placed so that the elderly and children can also rest and play here.



Figure. 46 Visualization of the Recreational and exercise areas / Author's Figure

On the east side of the course, an open lounge area has been set up to provide a place of shade and shelter from the sun. Some lounge chairs and a bar are also placed for people to use.

6.4 Constructional Details

Some constructional details are made to illustrate another scale of the design.

The following diagram shows the detailed structure of the main entrance plaza sculpture. The main body of the sculpture is made of stone and glass in a rectangular form, and the color of the stone is chosen to be yellow, so that the whole sculpture can be better integrated into the design style of the main entrance plaza.

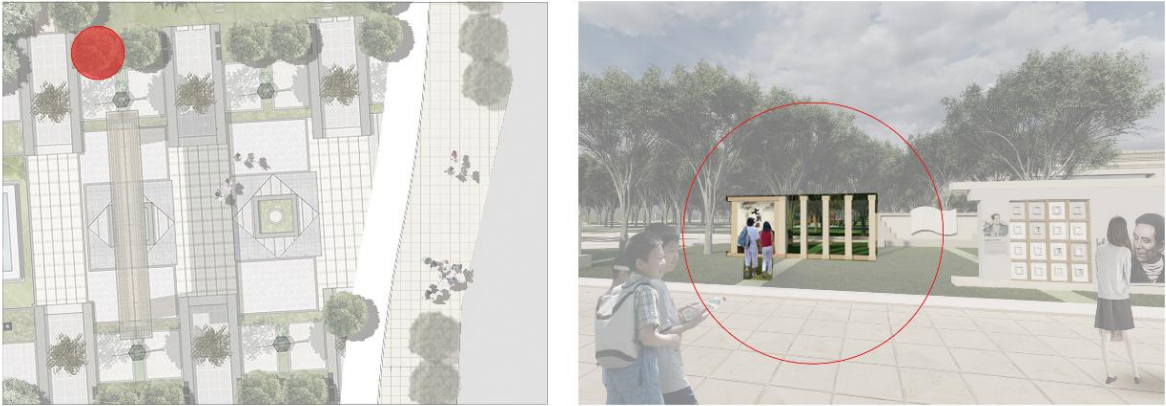
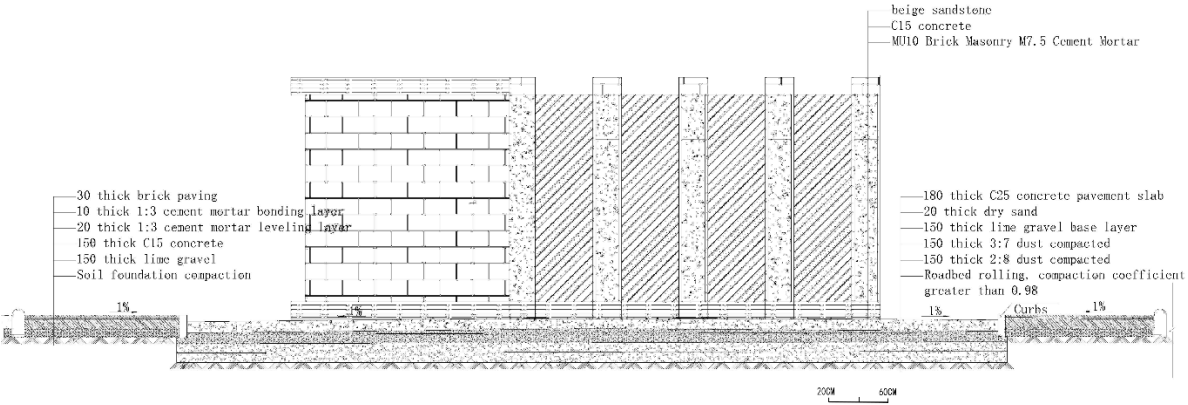


Figure. 47 Main Entrance Plaza Sculpture / Author's Figure



This picture shows the structure of the sculpture of the cultural plaza, in the choice of materials, still choose a larger volume, with stability of the stone, giving a sense of stability.

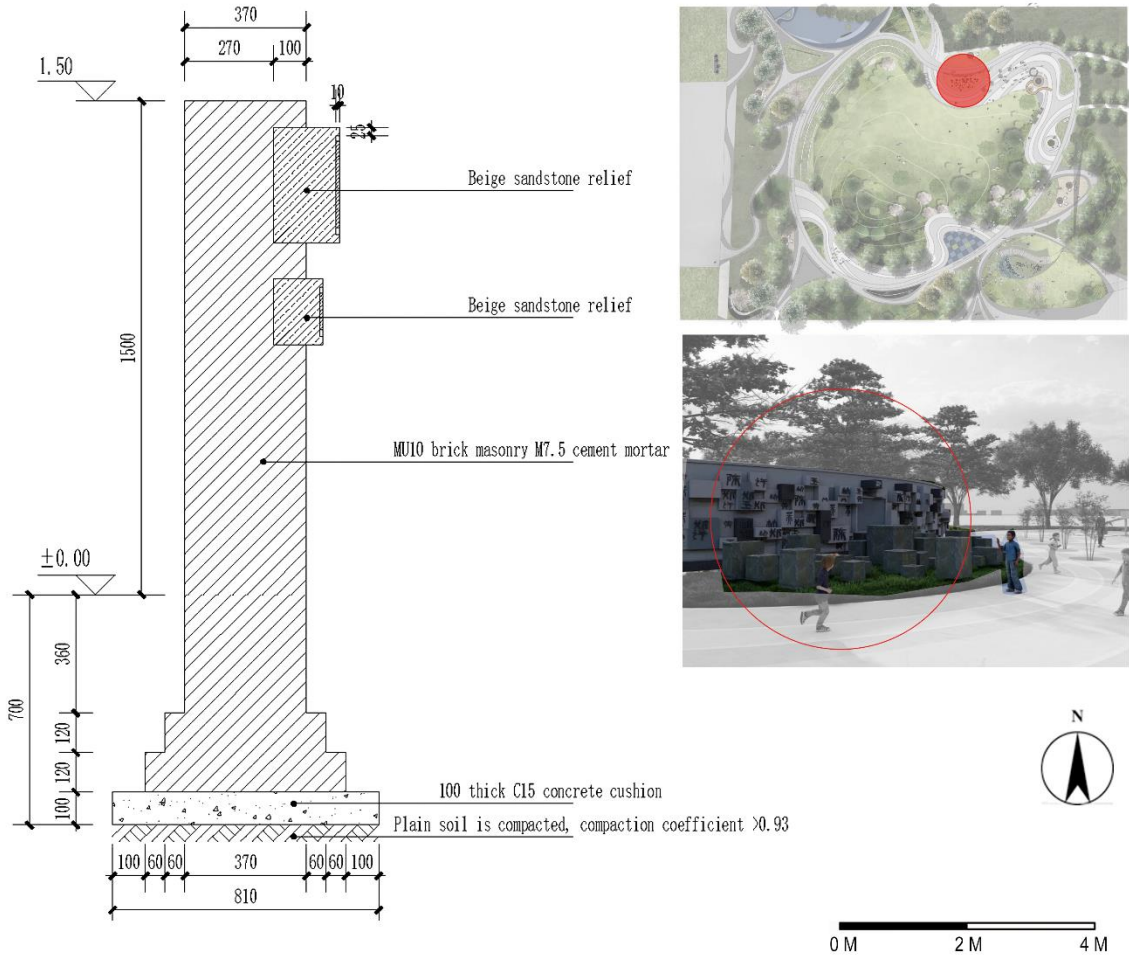


Figure. 48 Cultural Square Sculpture / Author's Figure

SUMMARY

Generally speaking, the construction of the Kaifeng Yellow River National Cultural Park is to better integrate the cultural landscape with the natural landscape, highlight the cultural characteristics of Kaifeng city, and promote better development of the park.

During the design process of the project, in order to better understand the design techniques and main content of the National Cultural Park, through the study and research of some cultural park cases, and then combined with the methods of site research and literature analysis, an in-depth analysis of the site was carried out, and Carry out planning and design on this basis.

The main conclusions of the project are as follows:

Proposed the design concept of Kaifeng Yellow River National Cultural Park, and designed the overall layout, functional zoning, road system, cultural events, main activity types, plant configuration, detailed planes, etc. of the site. During the design, folk culture, Yellow River culture and Combined with park design, we create tourism projects with Kaifeng characteristics such as the Yellow River Cultural Plaza and an open-air theater. We make full use of site resources to plan various cultural activities and folk activities to attract tourists and highlight the cultural diversity of Kaifeng City.

Through the landscape planning and design of the Yellow River National Cultural Park in Kaifeng City, the natural environment, cultural heritage and economic benefits of the Yellow River National Cultural Park in Kaifeng City will be enhanced, and people will pay more attention to cultural development, thereby stimulating people to explore, protect and inherit the Yellow River culture. Yellow River culture and folk culture, and also hope that this project can drive the development of Kaifeng City's tourism economy.

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- (INT-01) Introducing the Yellow River National Cultural Park Construction and Protection Plan
https://www.gov.cn/lianbo/bumen/202307/content_6892597.htm
- (INT-02) Communist Party of China News Network
<http://theory.people.com.cn/n1/2020/0103/c40531-31533273.html>
- (INT-03) Henan Provincial Government Website
<https://www.henan.gov.cn/2023/12-21/2870312.html>
- (INT-04) Henan Provincial Government Website
<https://www.henan.gov.cn/2023/03-29/2715970.html>
- (INT-05) Kaifeng City North Riverside Area Special Planning
<http://www.fudandesign.com/index.php?a=shows&catid=3&id=13>
- (INT-06) Chinese government website
https://www.gov.cn/zhengce/2017-09/26/content_5227713.htm
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https://www.gov.cn/zhengce/2017-09/27/content_5227895.htm
- (INT-08) Plan of Tianfu fire Culture Park
<https://zhuanlan.zhihu.com/p/78520077>
- (INT-09) Effect drawing of Tianfu fire Culture Park Road
<https://zhuanlan.zhihu.com/p/78520077>
- (INT-10) Map of Tianfu fire Culture Park
<https://zhuanlan.zhihu.com/p/78520077>
- (INT-11) Plan of West Chang'an Street Culture and Art Park
https://www.sohu.com/a/429307352_99929896
- (INT-12) Aerial view of West Chang'an Street Culture and Art Park
https://www.sohu.com/a/429307352_99929896
- (INT-13) Average Rainfall Amount (mm) and Rainy Days
<https://www.weatheratlas.com/zh/china/kaifeng-climate>
- (INT-14) Average Rainfall Amount (mm) and Rainy Days
<https://www.weatheratlas.com/zh/china/kaifeng-climate>
- (INT-15) Max, Min and Average Temperature (°c)
<https://www.weatheratlas.com/zh/china/kaifeng-climate>

- (INT-16) Kaifeng Drum
https://baike.so.com/gallery/list?ghid=first&pic_idx=1&eid=6266223&sid=6479645
- (INT-17) Chrysanthemum in Kaifeng, Henan
<https://travel.qunar.com/p-cs300165-kaifeng-zhinan>
- (INT-18) Millennium city park
<https://www.qingmings.com/>
- (INT-19) Site Elevation Map
<https://zh-cn.topographic-map.com/map-p3cldn/%E5%BC%80%E5%B0%81%E5%B8%82/?center=34.85104%2C114.3698&zoom=14>
- (INT-20) Inspiration maps for cultural spaces
https://preview.qiantucdn.com/ing/70/95/21/34W58PICAMRx3hnNAteH2PIC2018.jpg%21w1024_new_small
- (INT-21) Inspiration maps for nature spaces
<https://img1.baidu.com/it/u=1111827313,140272295&fm=253&fmt=auto&app=138&f=JPEG?w=400&h=266>
- (INT-22) Inspiration maps for fitness spaces
<https://5b0988e595225.cdn.sohucs.com/images/20191226/3950985c58d5469c99181d160b4f158a.jpeg>

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ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my advisor, Dr. Valánszki István, and my co-advisor, Ansam Bzour, for helping me academically throughout the year.

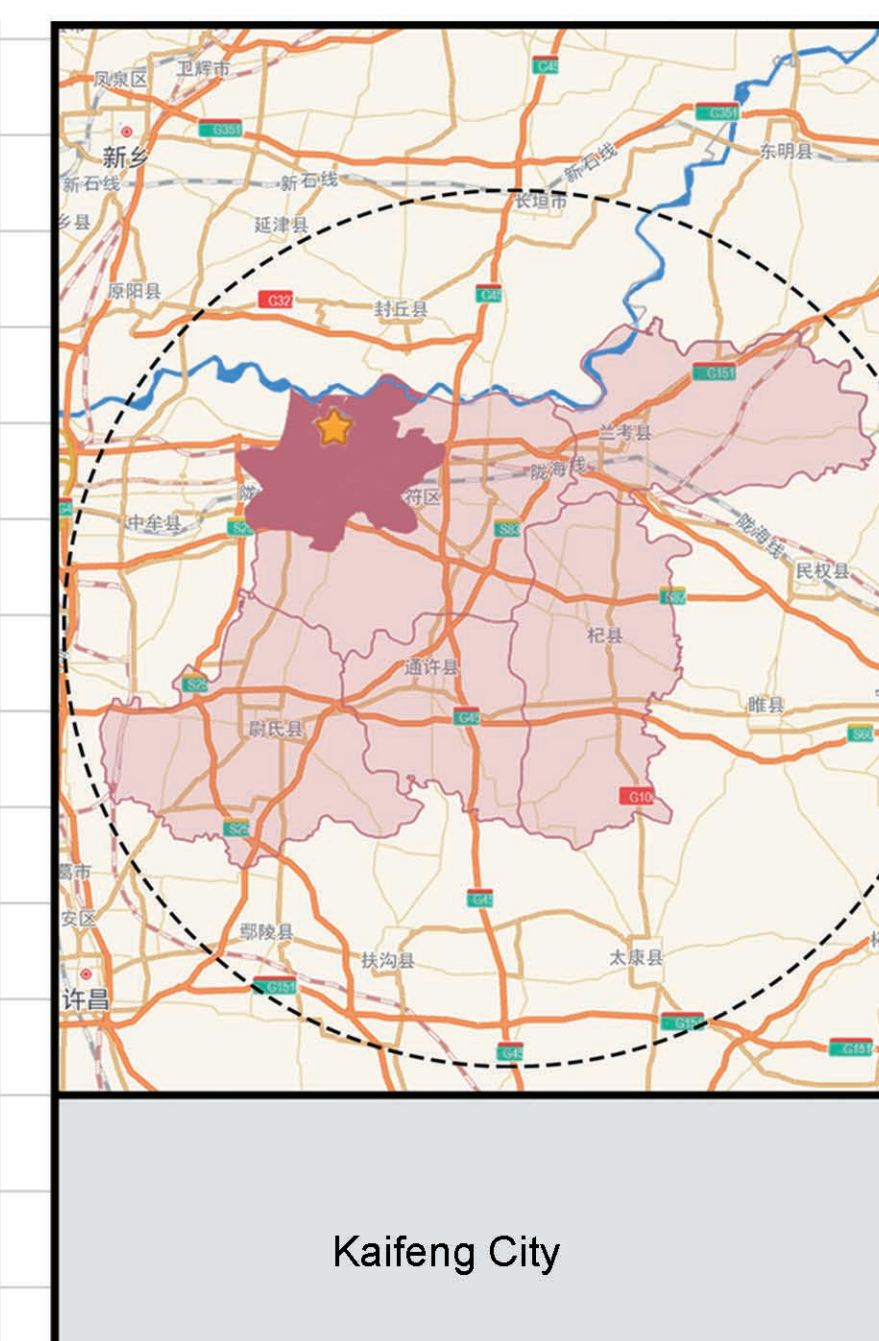
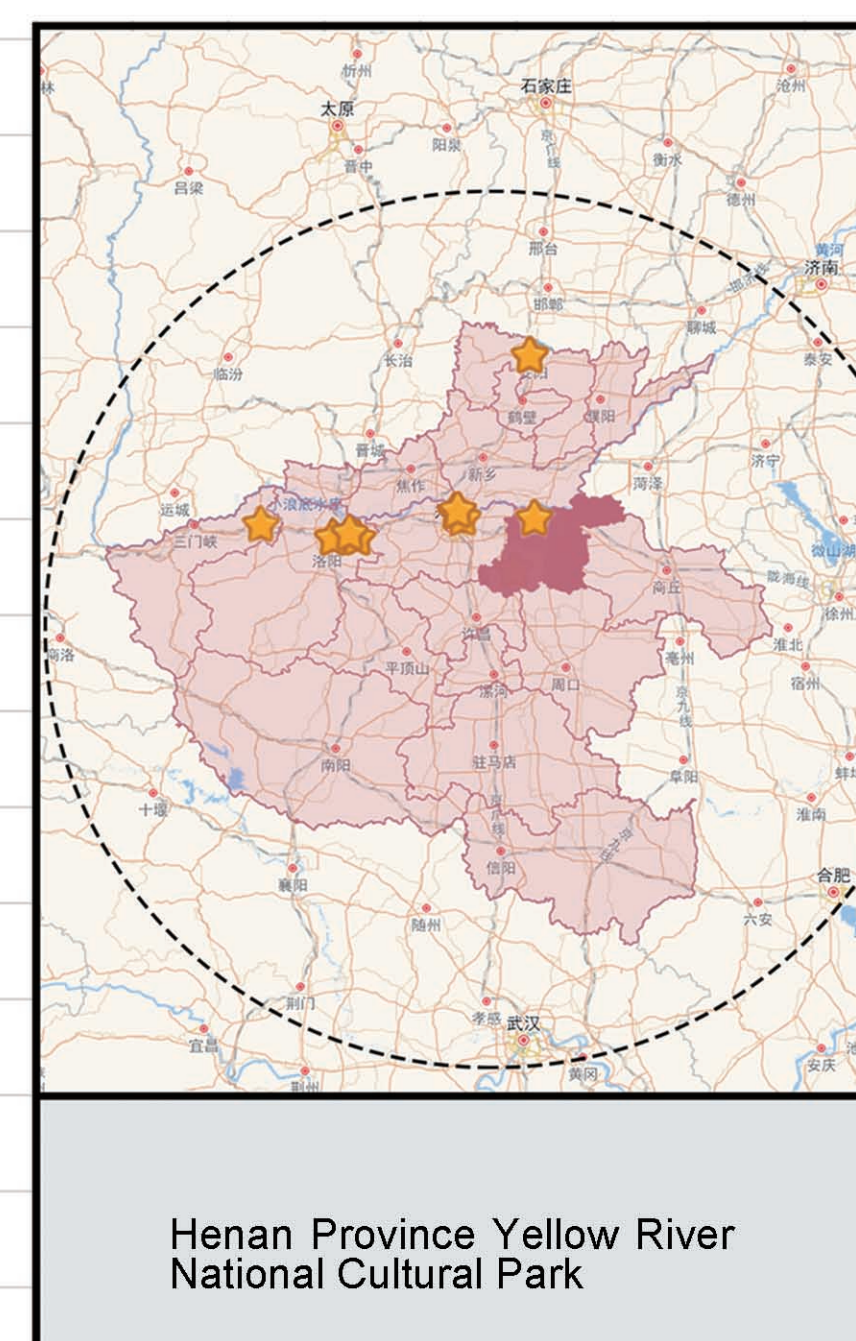
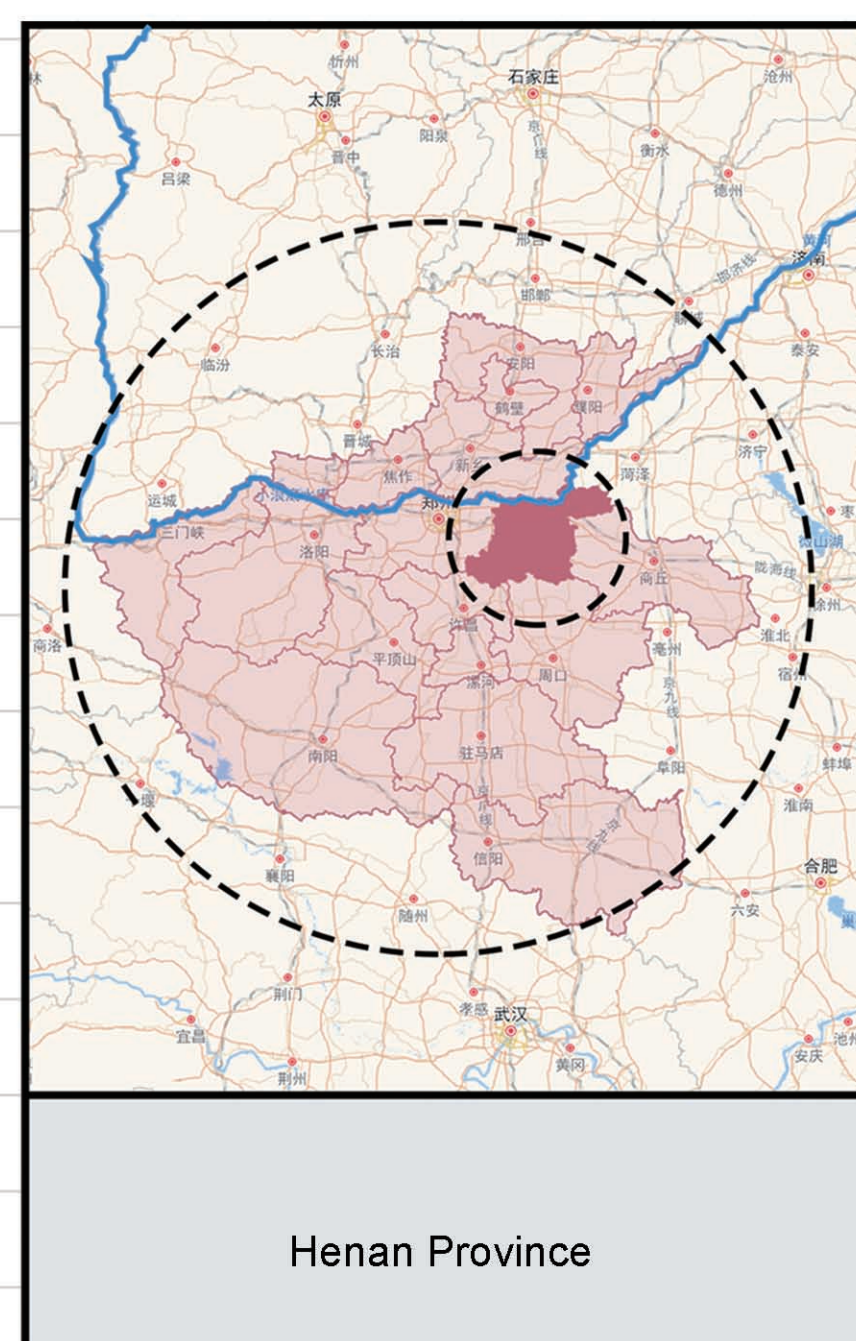
I would like to thank my parents for their unlimited moral and financial support.

I would like to thank my MLA classmates, who accompanied me successfully through my two happy years in Hungary and gave me all kinds of emotional value every day.

Finally, I would like to thank Henan Agricultural University and the Hungarian University of Agricultural and Life Sciences for giving me this opportunity to study and a platform to learn about different cultures and broaden my horizons.

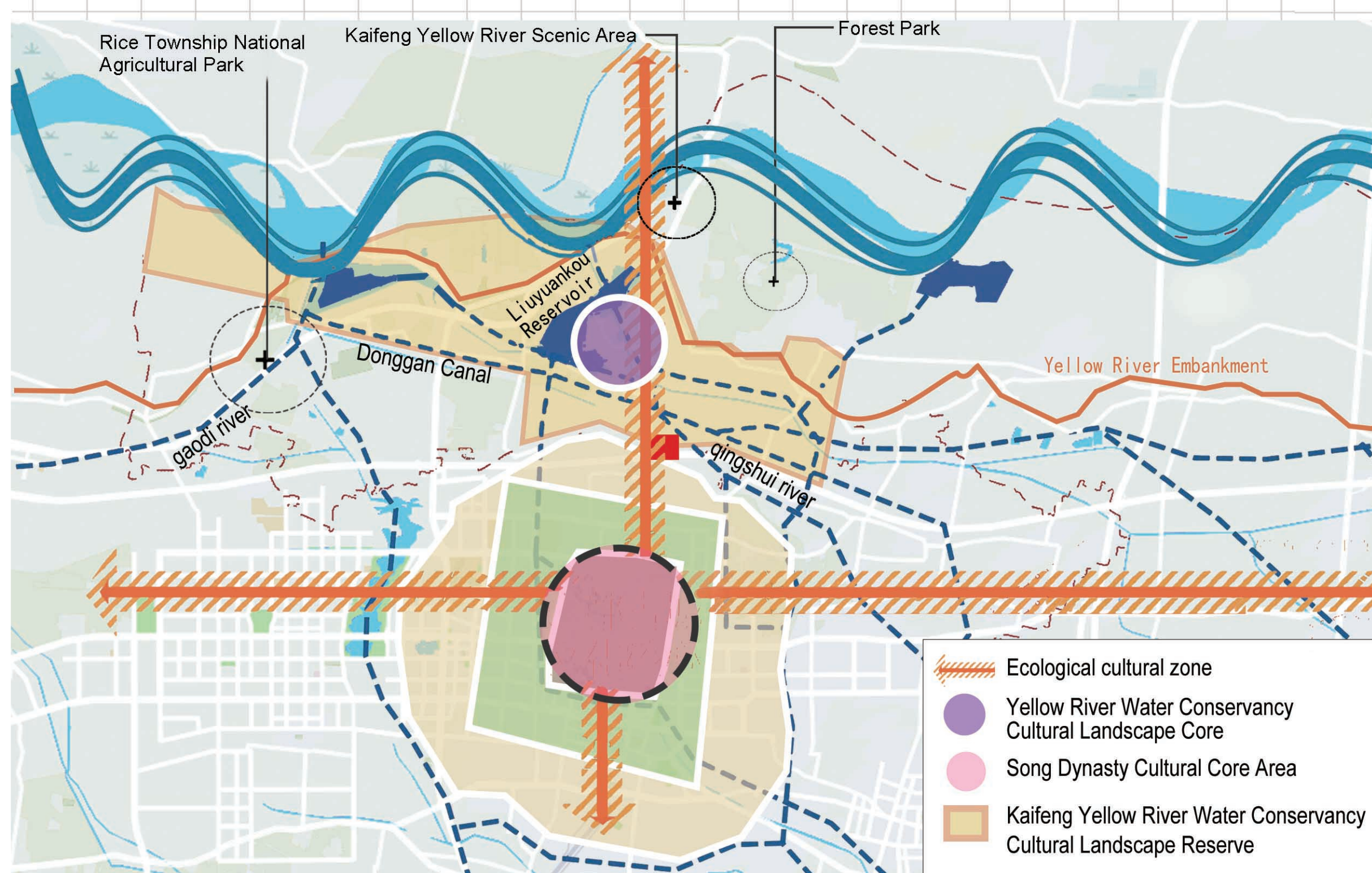
The Yellow River National Cultural Park is an important symbol of Chinese culture, and the Yellow River is known as the mother river of the Chinese nation. With the Yellow River culture as the core, Chinese civilization has been formed. The construction of the Yellow River National Cultural Park is an important measure and means to protect and inherit the Yellow River culture. As part of the Yellow River Basin, Kaifeng City in Henan Province is planning to build the Yellow River National Cultural Park.

In the process of constructing the Yellow River cultural landmark system, we will take the culture of Kaifeng City, the Yellow River landscape culture and the Yellow River governance culture as the main lines, and dig deeply into the cultural connotations therein. We will tell the glorious history of the Communist Party of China in governing the Yellow River in a more vivid way, and inherit and carry forward the spirit of Jiao Yulu and other advanced figures. This is not only the protection of the Yellow River culture, but also the inheritance and promotion of traditional Chinese culture, leaving a rich and valuable cultural heritage for future generations.



DISTRICT ANALYSIS

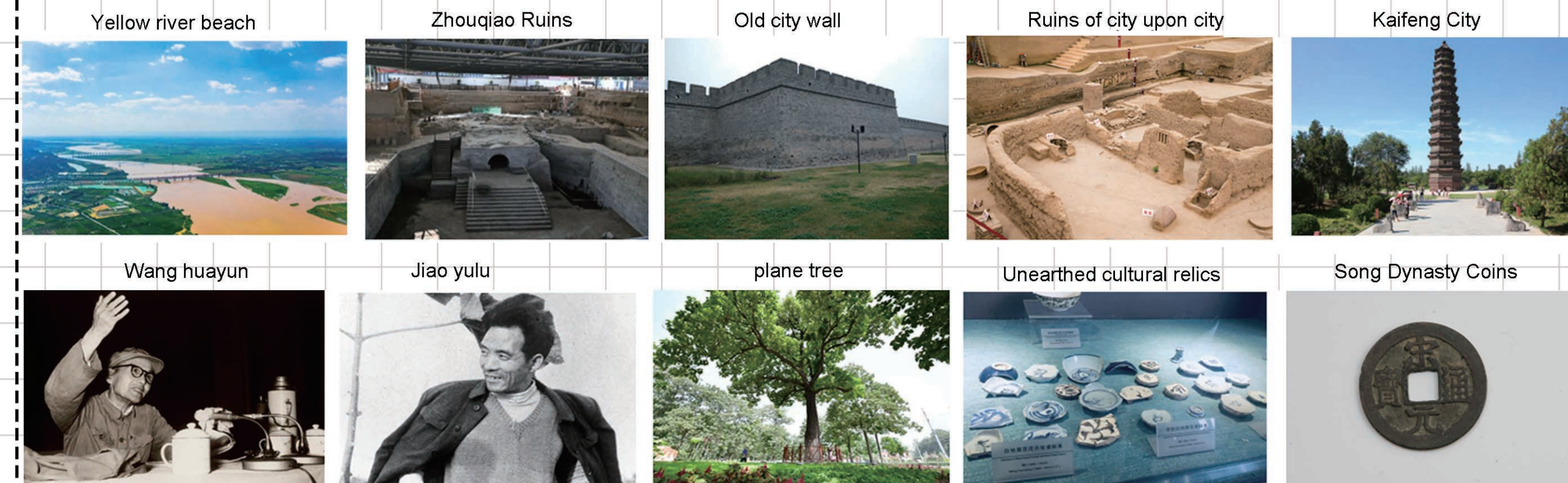
The site is located within the ecological and cultural zone, also between Kaifeng cultural core area and the Yellow River cultural landscape protection area. With the Yellow River water conservancy culture + Song capital ancient city culture as the two main landmarks, activating the cultural tourism along the Yellow River, it can realize the extension from the ancient city to the core of the Yellow River water conservancy culture landscape.



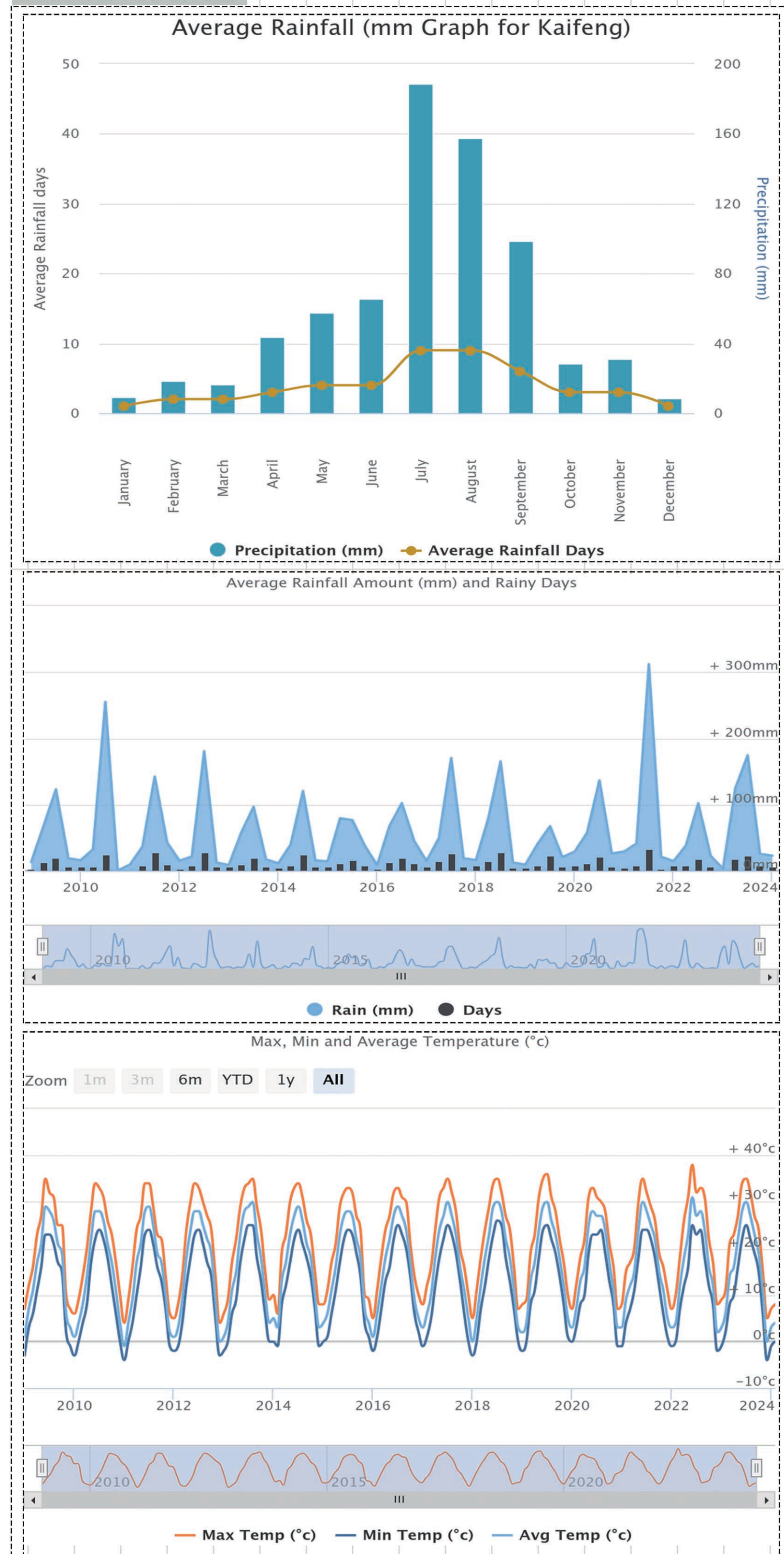
HISTORICAL AND HUMANISTIC ANALYSIS

Kaifeng is an important ancient capital situated on the bank of the Yellow River. The historical flow of the Yellow River for thousands of years has left Kaifeng a rich natural and cultural heritage.

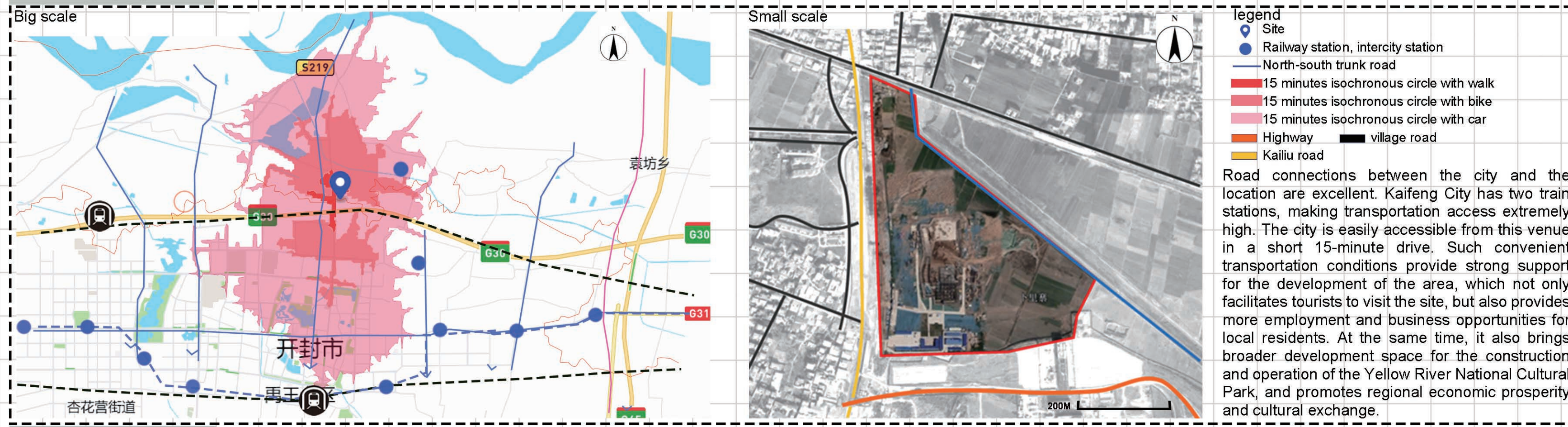
Rural culture has Longting District Rice Township, which is the origin of Yellow River big carp and produces rice, Bianliang watermelon, peanuts, etc. Liuyankou Township is the hometown of pan drums. Duliang Township of Xiangfu District has iron pen branding, willow weaving and qu opera troupe.



CLIMATE ANALYSIS



TRAFFIC SYSTEM



WATER SYSTEM



TOPOGRAPHY ANALYSIS



SURROUNDING ANALYSIS



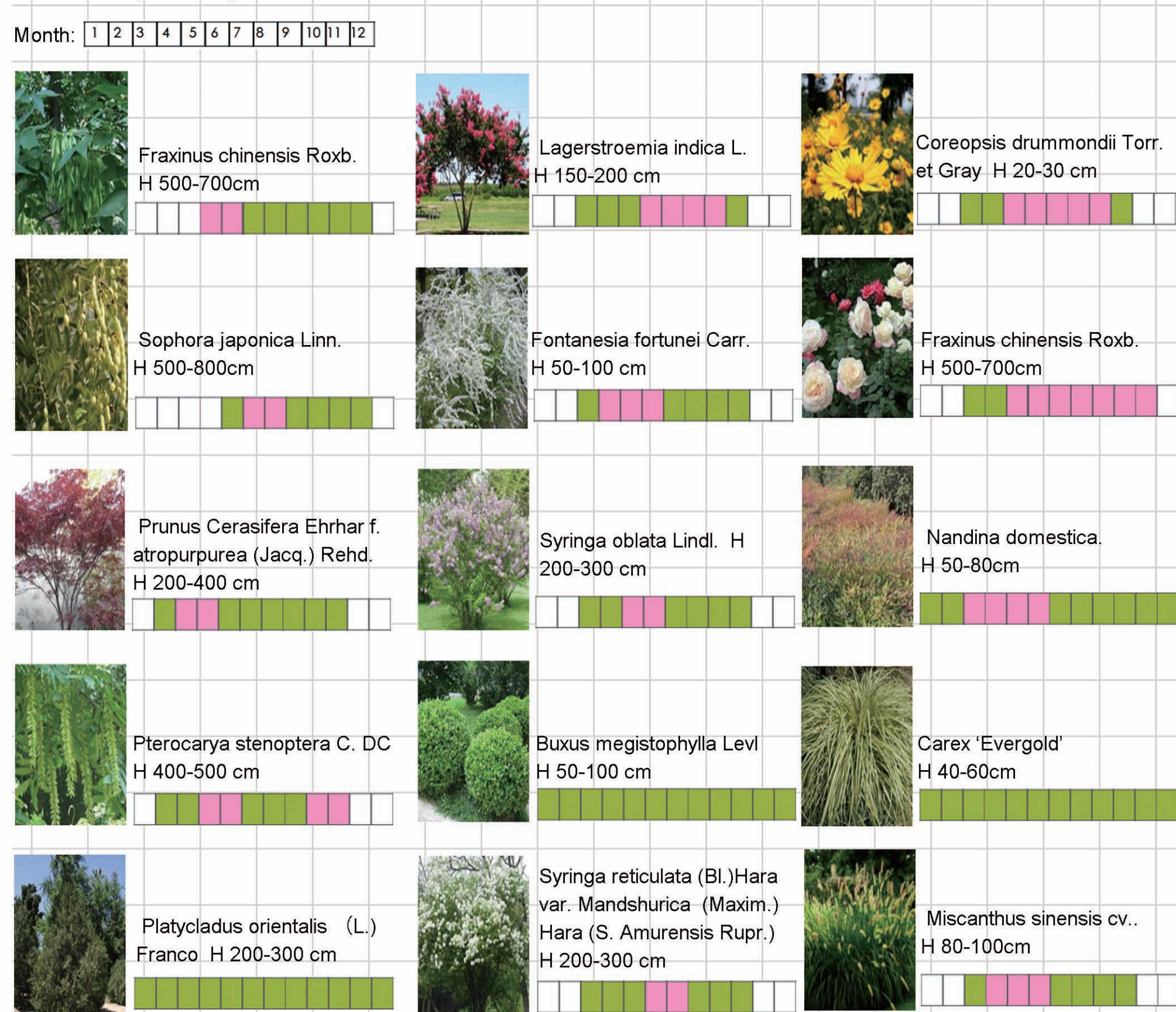
BUILDING STATUS



VEGETATION



Plants Monthly Landscape Characteristic Color Palette



Urban greening: In Kaifeng city, as well as in the roads, parks, squares and other areas in the suburbs, a large number of trees and shrubs have been planted to form a green scene, which enhances the comfort and beauty of the urban environment.

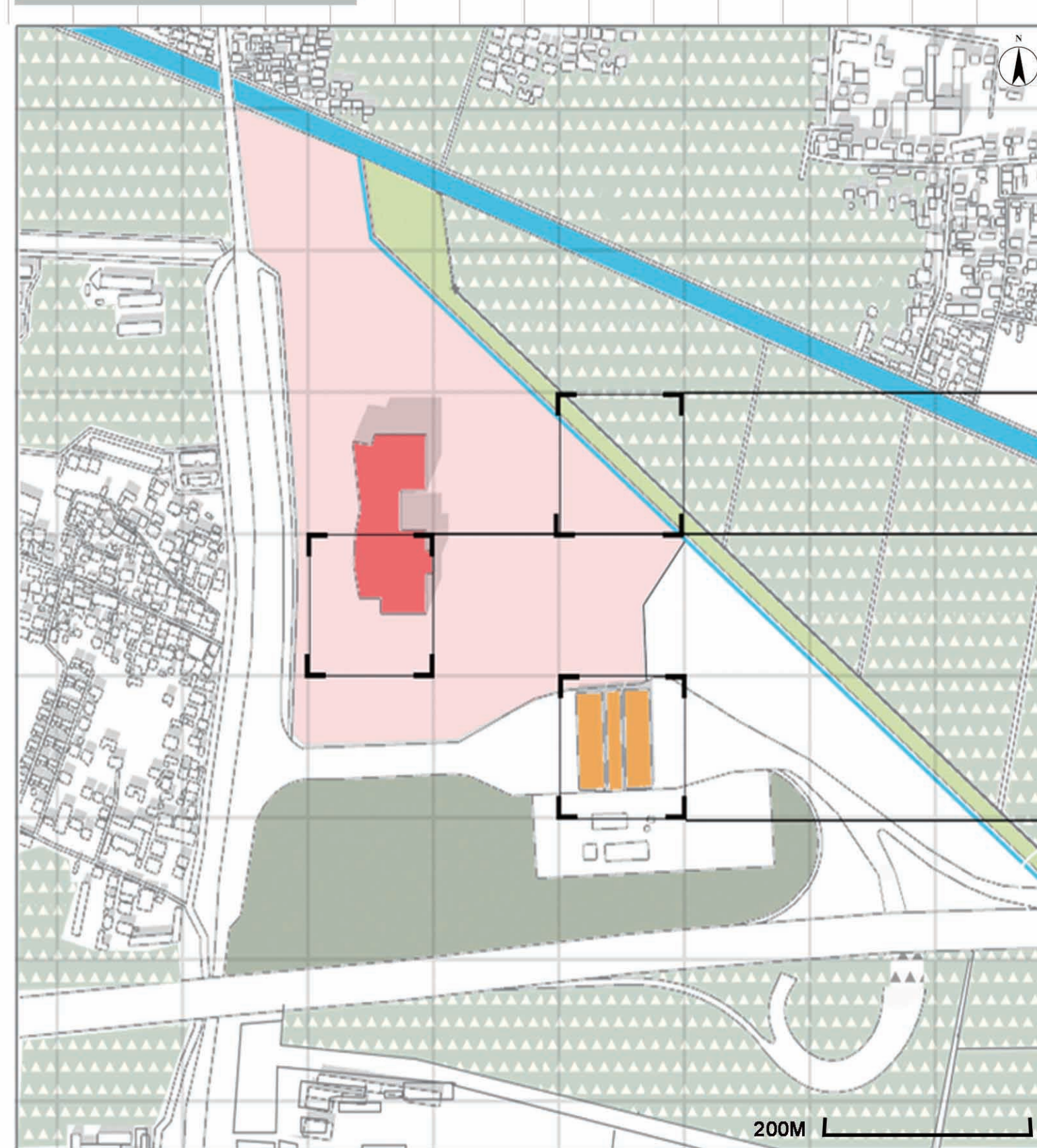
Riverbank vegetation: The vegetation around rivers and water systems is rich and diverse. Along the Yellow River and its tributaries, common vegetation includes trees adapted to the aquatic environment such as poplars and willows, as well as wetland plants such as reeds and cattails along the river. These vegetation not only beautify the riverbank line, but also help to protect the ecological environment of the riverbank.

Farmland and Suburban Vegetation: Suburban and rural areas consist mainly of farmland and cropland where abundant crops are grown. Vegetation such as paddy fields, wheat fields, orchards and vegetable fields form the main landscape of rural areas.

ZHANG QIAN
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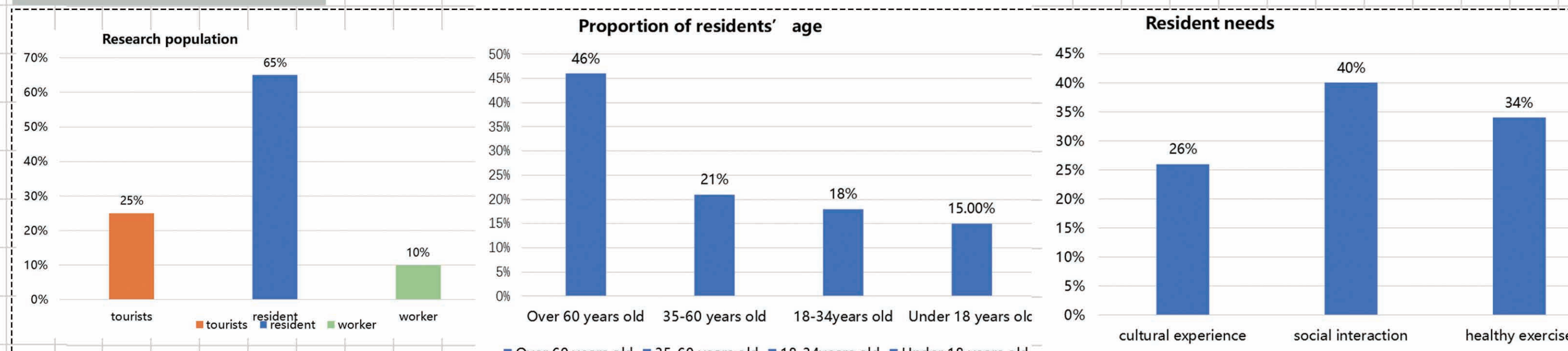
DEPARTMENT OF GARDEN AND OPEN SPACE DESIGN

SITE PROBLEM

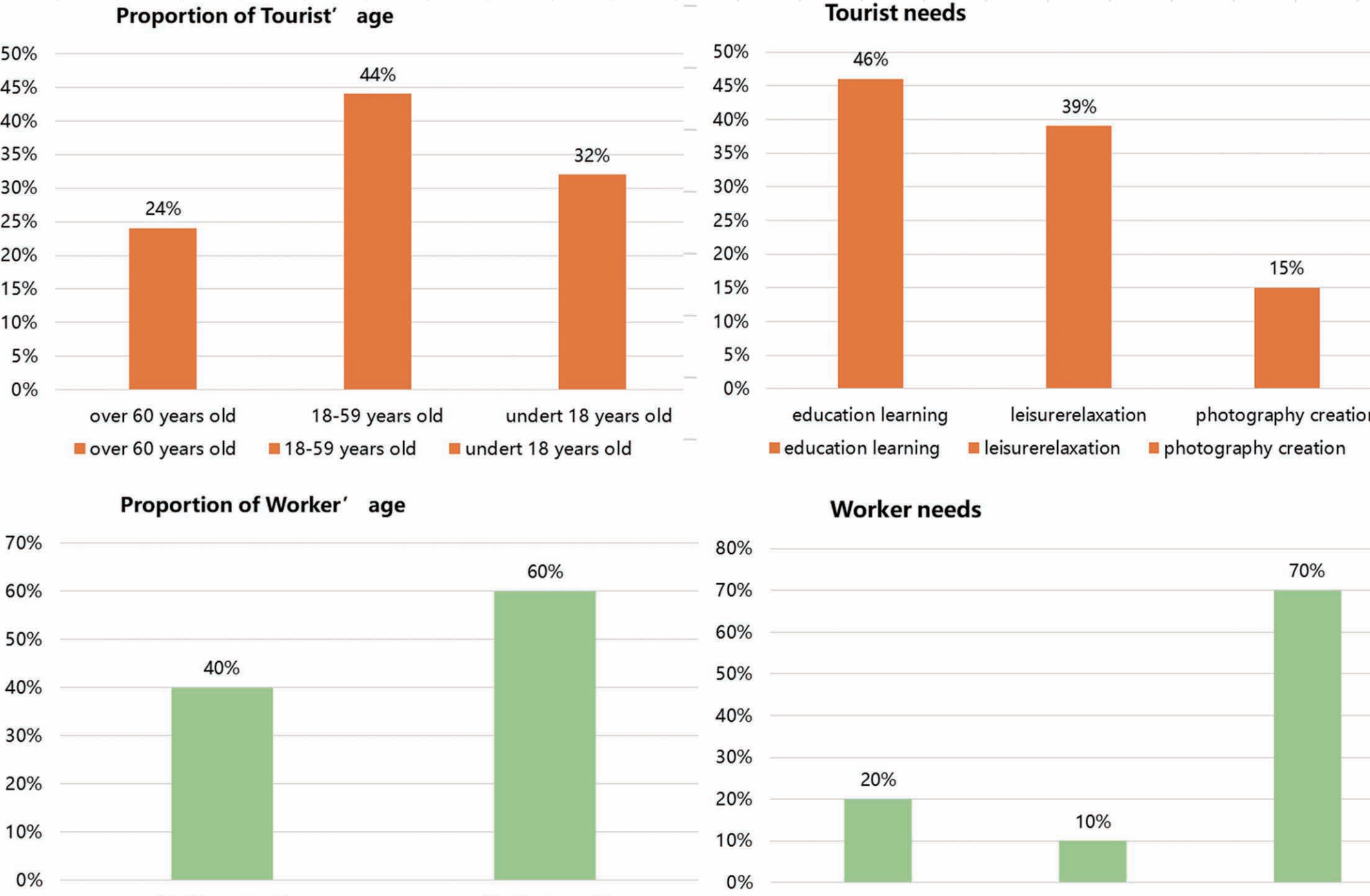
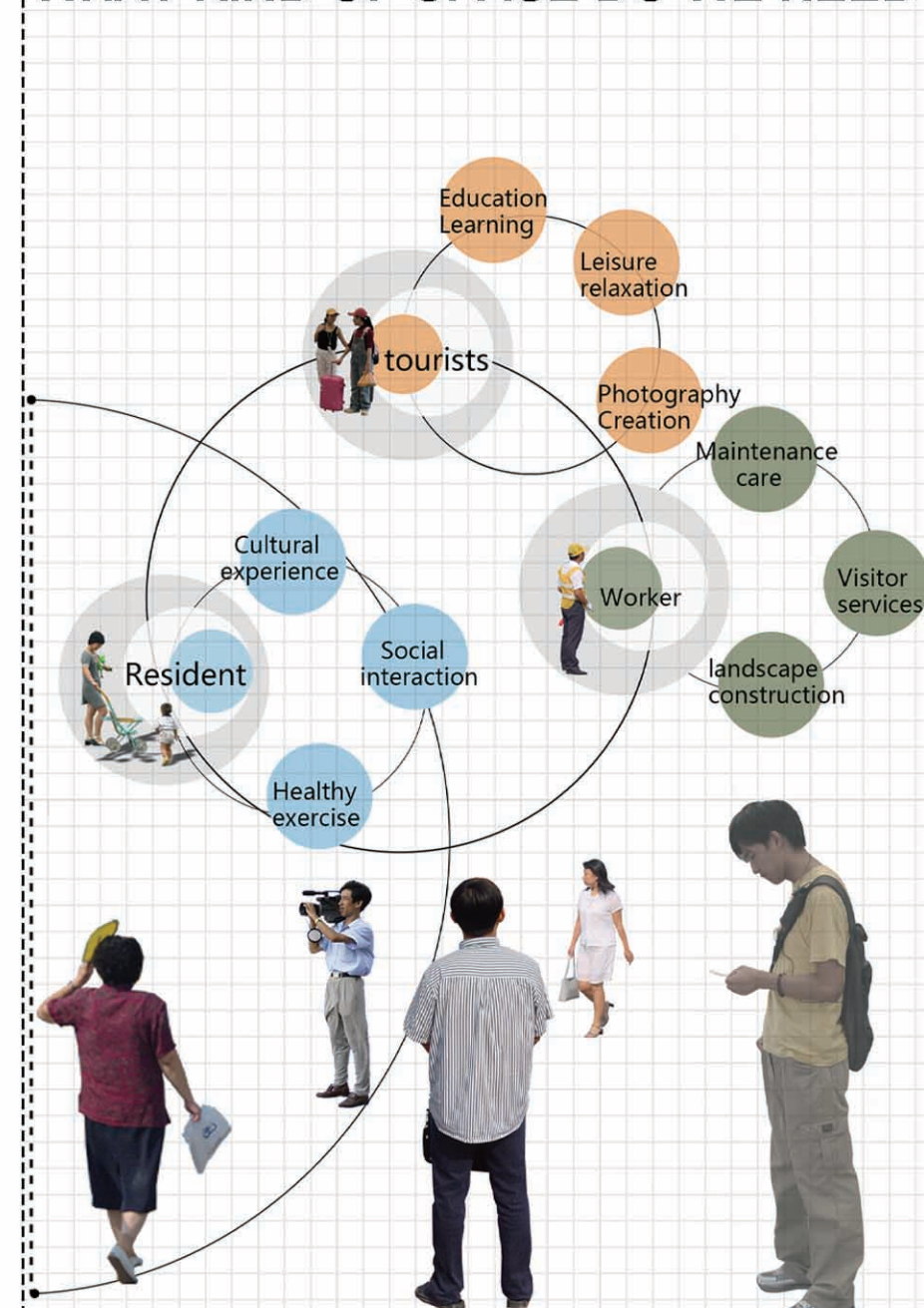


When dealing with issues related to the effective use of tourism resources and the layout of multi-functional spaces, we need to focus on sustainable solutions. First of all, for the effective use of tourism resources, the historical heritage and unique charm of the Yellow River culture can be fully demonstrated through scenic spot design and planning to attract tourists' interest. Secondly, in terms of multi-functional space layout, we can focus on the flexibility and diversity of the site. In general, through scientific planning, rational utilization and innovative management, new vitality and power can be injected into the development of the Yellow River National Cultural Park.

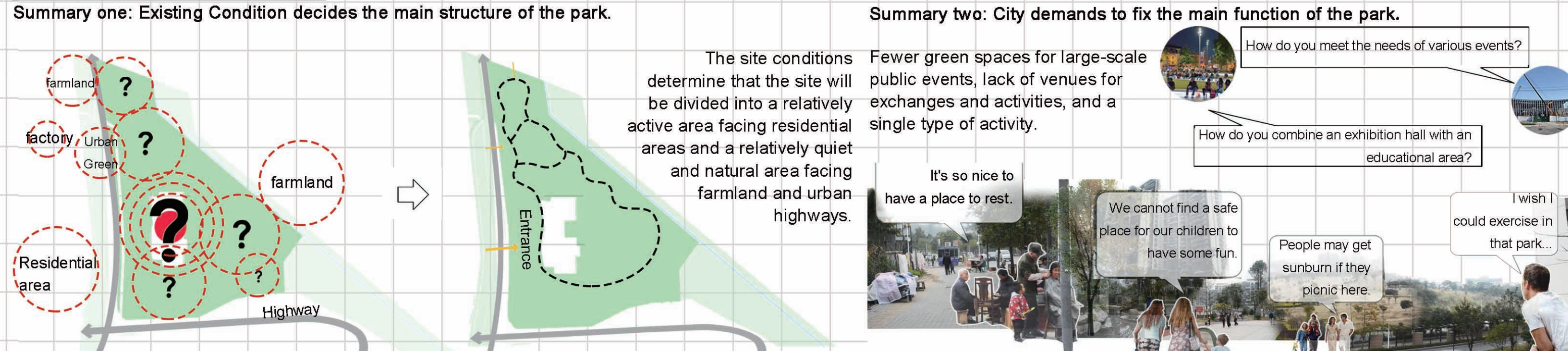
USE AND USER



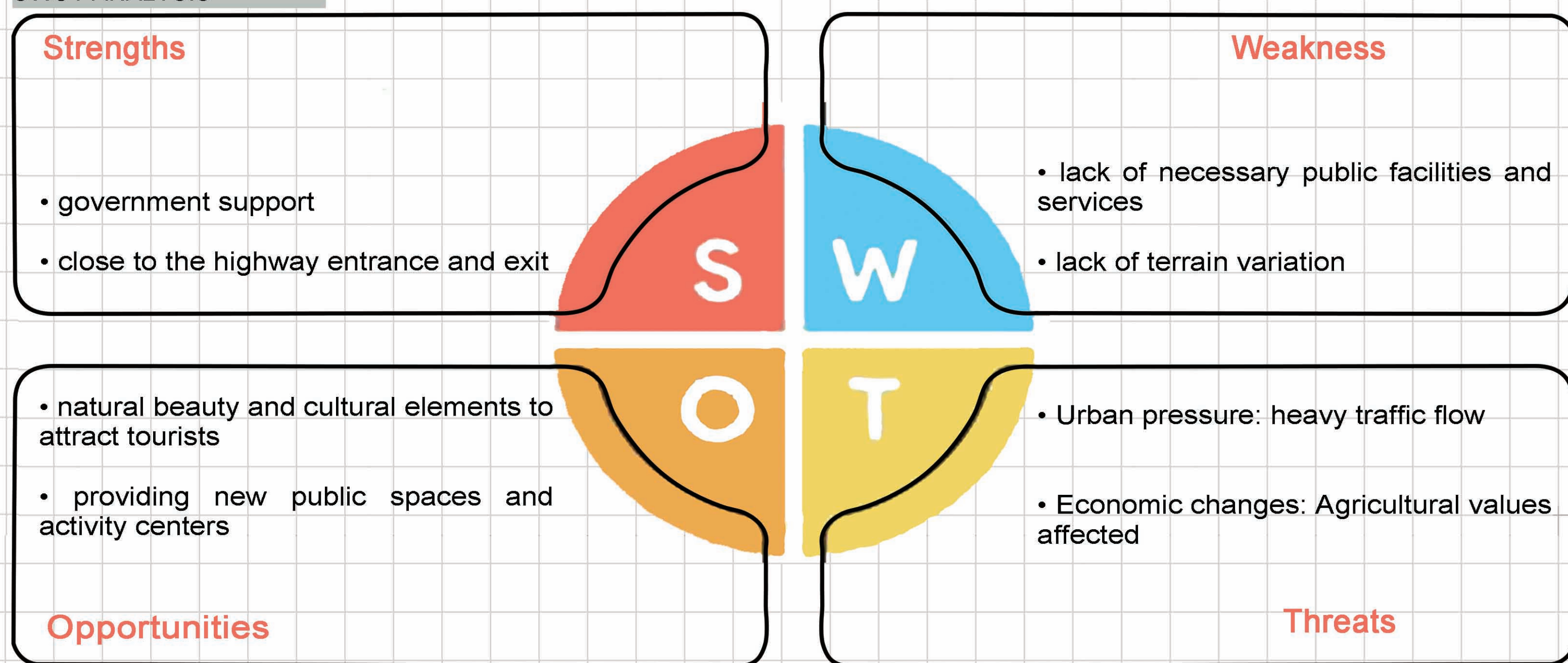
WHAT KIND OF SPACE DO WE NEED?



SUMMARY



SWOT ANALYSIS



SUPERVISOR: DR. VALÁNSZKI ISTVÁN

Ineffective tourism development and regional functions
Inadequacy of tourism management plans.
Lack or deficiencies in site functionality.

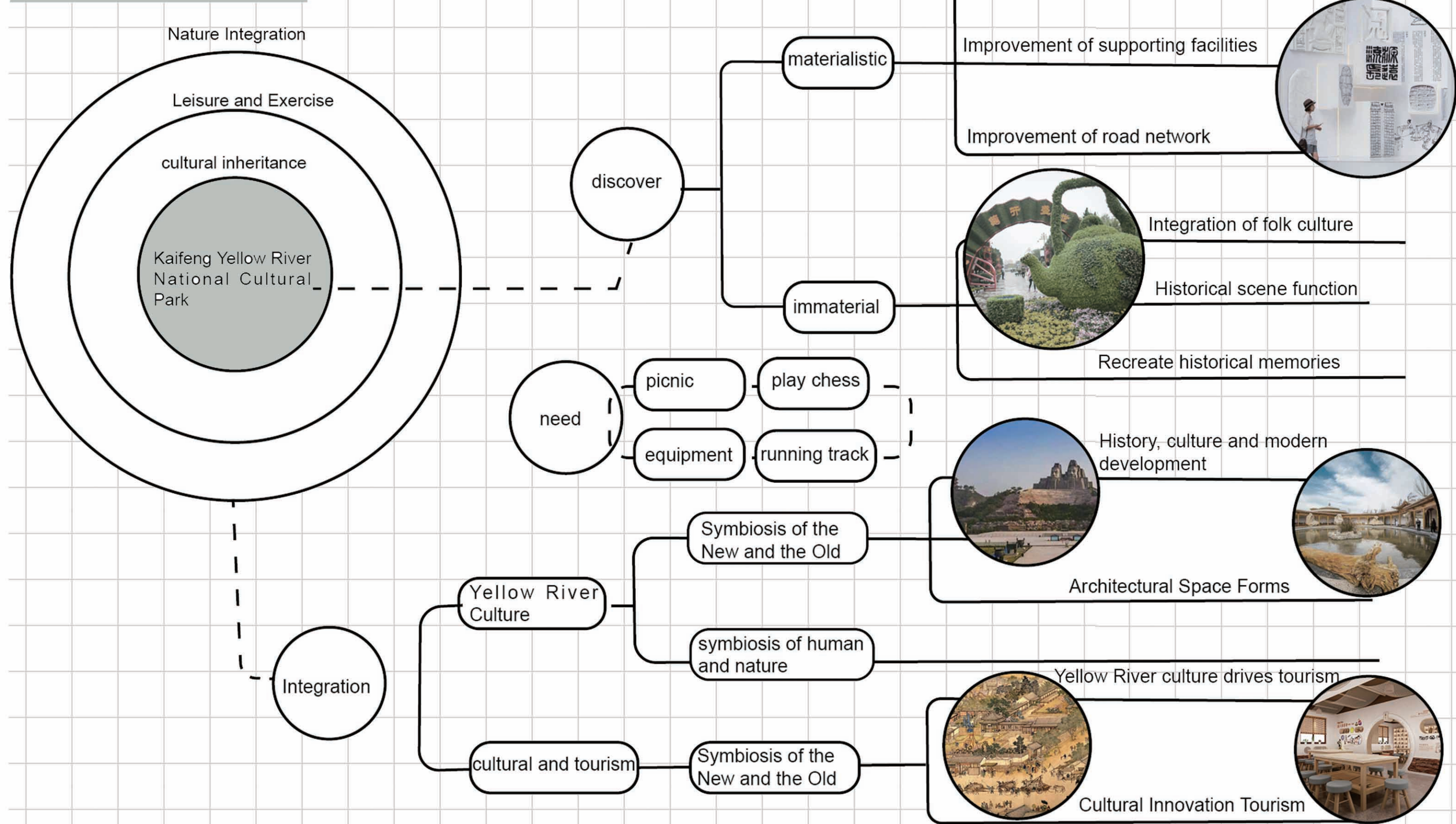
Poor ecological environment and green space system
Degradation of the ecological environment and lack of maintenance.

Chaotic traffic impacts
Negative impact of the traffic system on the site, prone to traffic jams, dirty dirt roads, lack of parking.

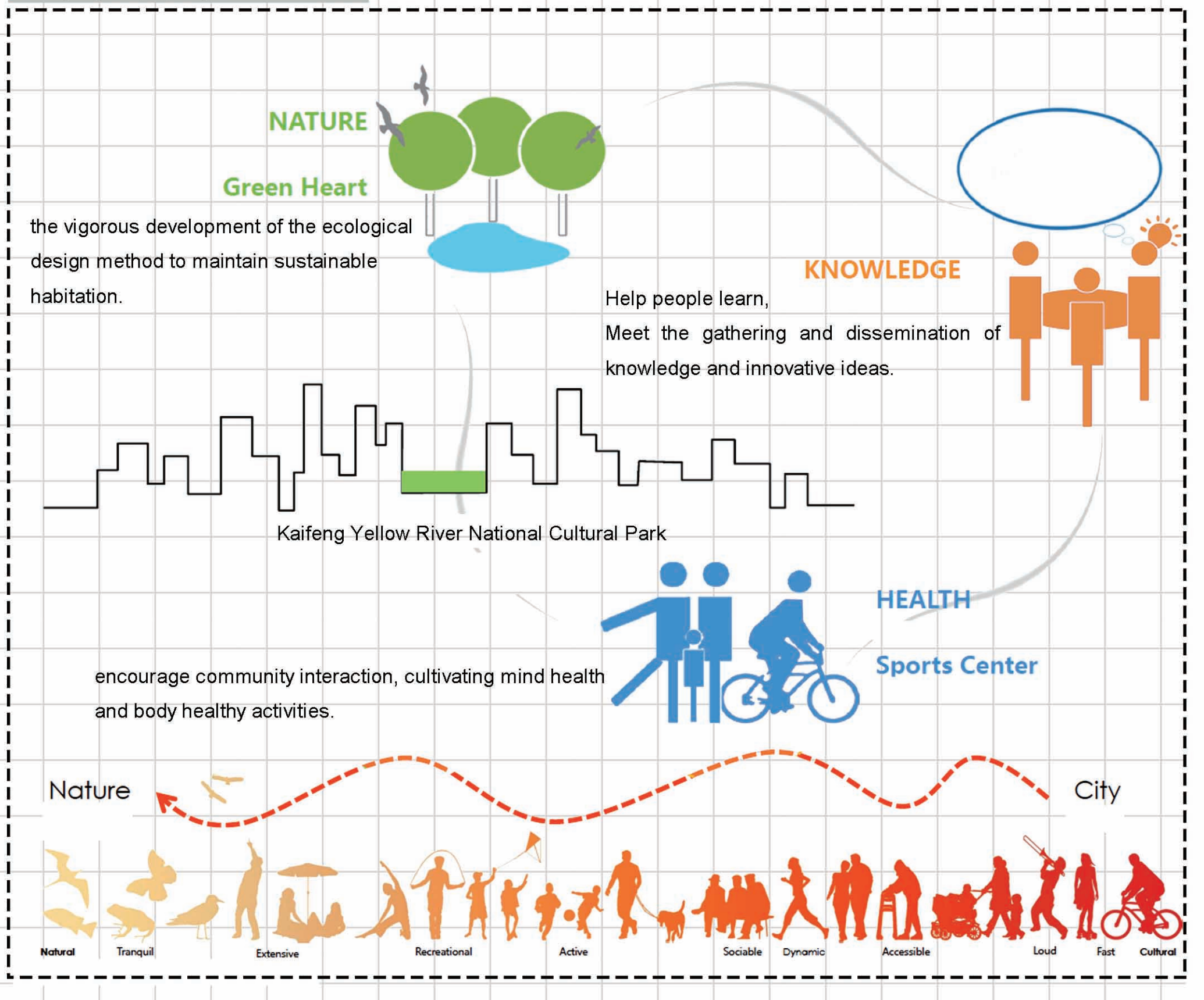


INSTITUTE OF LANDSCAPE ARCHITECTURE, URBAN PLANNING AND GARDEN ART
LANDSCAPE ARCHITECTURE AND GARDEN DESIGN MA PROGRAMME

DESIGN IDEAS



DESIGN CONCEPT



The design aims to create a comprehensive public space integrating cultural education, sports and fitness, and ecological protection. The park will include exhibition halls, outdoor mini-theaters and other cultural facilities to showcase the rich local history and culture and the Yellow River civilization; at the same time, it will plan open sports grounds, fitness trails and other sports facilities to meet the public's health needs; and it will make full use of the natural resources to create a beautiful ecological environment, so that the public will be able to feel the importance of ecological preservation at the same time as they are enjoying their leisure and recreation.

DESIGN STRATEGY

KNOWLEDGE+EXHIBITION

Knowledge is the catalyst for better city.

The display and inheritance of local culture.

Help citizens to learn, improve gather and spread of knowledge and innovative idea.

HOW TO DO IT?

Kaifeng, the ancient capital of the Song Dynasty.

The continuation of Yellow River civilization.

Absorb the essence and face the future.

NODE DESIGN

SPACE SEGMENTATION

SAFE COMMUNICATION

ENTRANCE PLAZA

TERRAIN CREATION

EDUCATION AND POPULARIZATION OF SCIENCE

LEISURE AND RECREATION

NATURE+GREEN HEART

The Heart habitat to Urban People.

The city green living room.

The eco design method main the sustainable habitation developing a lot.

HOW TO DO IT?

To offer an ecological living landscape as a medium for contacting nature.

Create diverse landforms and rich landscapes. Eventually it becomes an independent green ecosystem.

FITNESS+SPORTS CENTER

The Antidote to Urban Life.

Rich variety of sports method promote happiness.

Encourage the community interaction, cultivating mind health and body healthy activities.

HOW TO DO IT?

Introducing fully functional green infrastructure.

Highlight the interactivity and participation of the park.

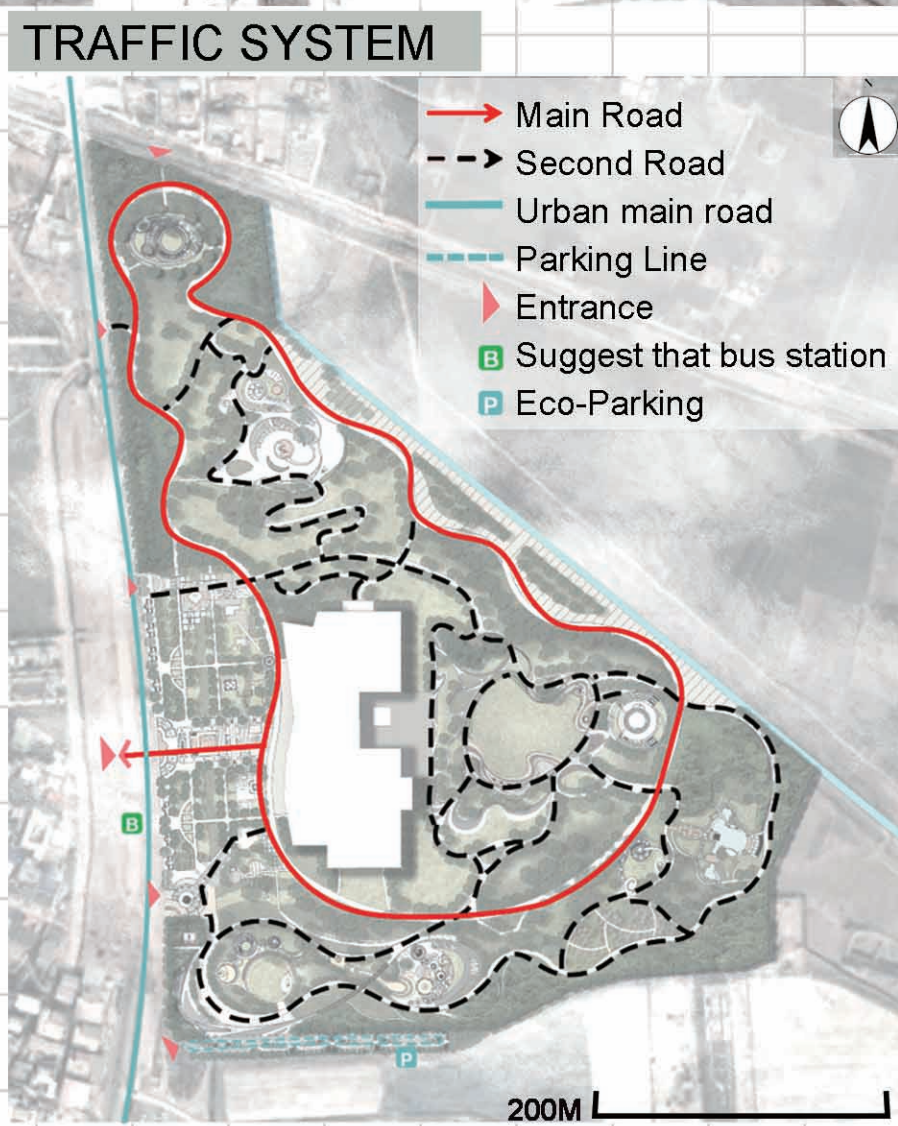
Meet the diverse uses of the venue.

Form an activity center for surrounding communities

Within the Yellow River Cultural Park, we will design an outdoor cultural and educational science space to showcase the Yellow River civilization and scientific knowledge. Cultural and artistic sculptures and signage will be installed to introduce the origin and development of the Yellow River culture. I hope to let visitors feel the charm of culture and science in the natural environment and enhance their knowledge and interest in Yellow River civilization and scientific knowledge.

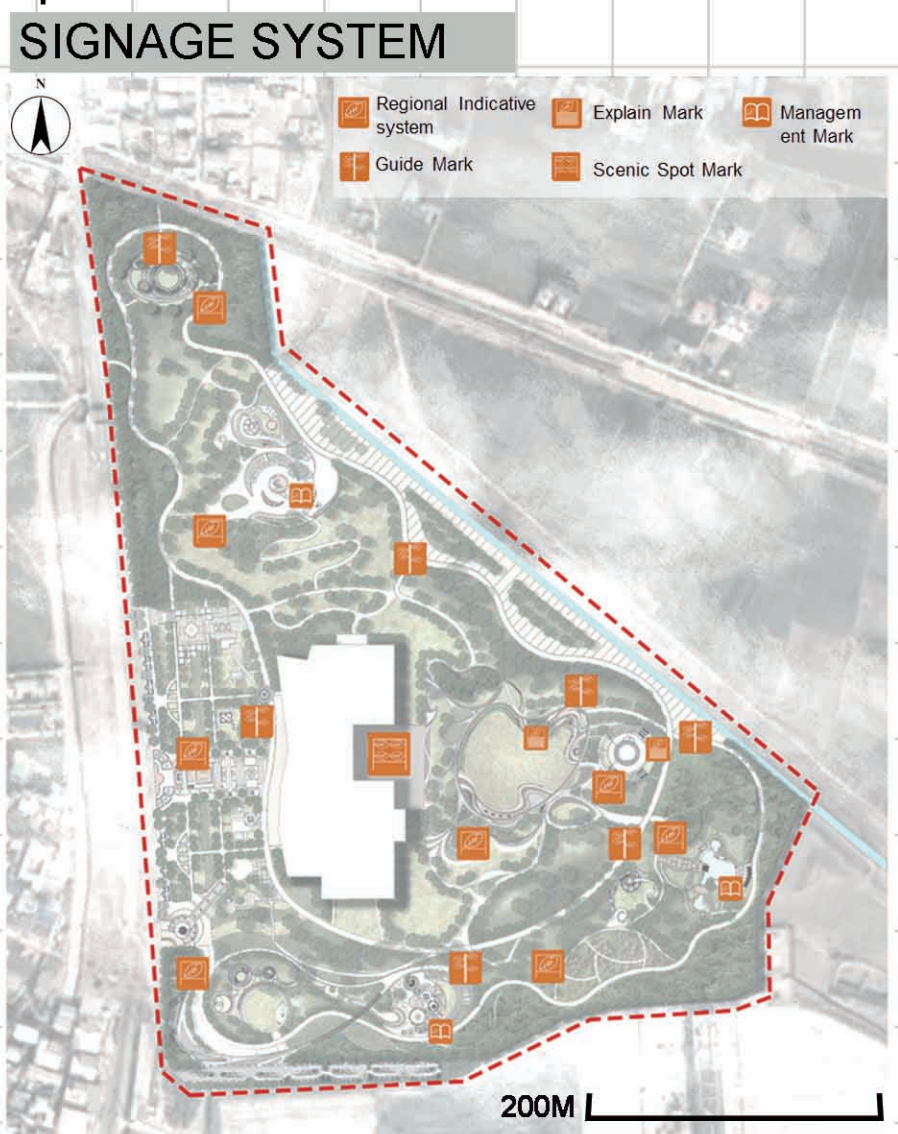
Areas for relaxation and recreation will also be designed, including lawn sitting areas and landscaped viewing strips. A variety of plants and flowers will be arranged to create a tranquil environment for visitors to stroll or sit down. The lawn sitting-out area will provide comfortable cushions and shade facilities for visitors to lie down on the grass or have a picnic and enjoy the sunshine and fresh air of the outdoors.

BUBBLE DIAGRAM



Parking location	Vehicle	Bus	Bike
south side of site	200	30	300
East side of site	20	0	100

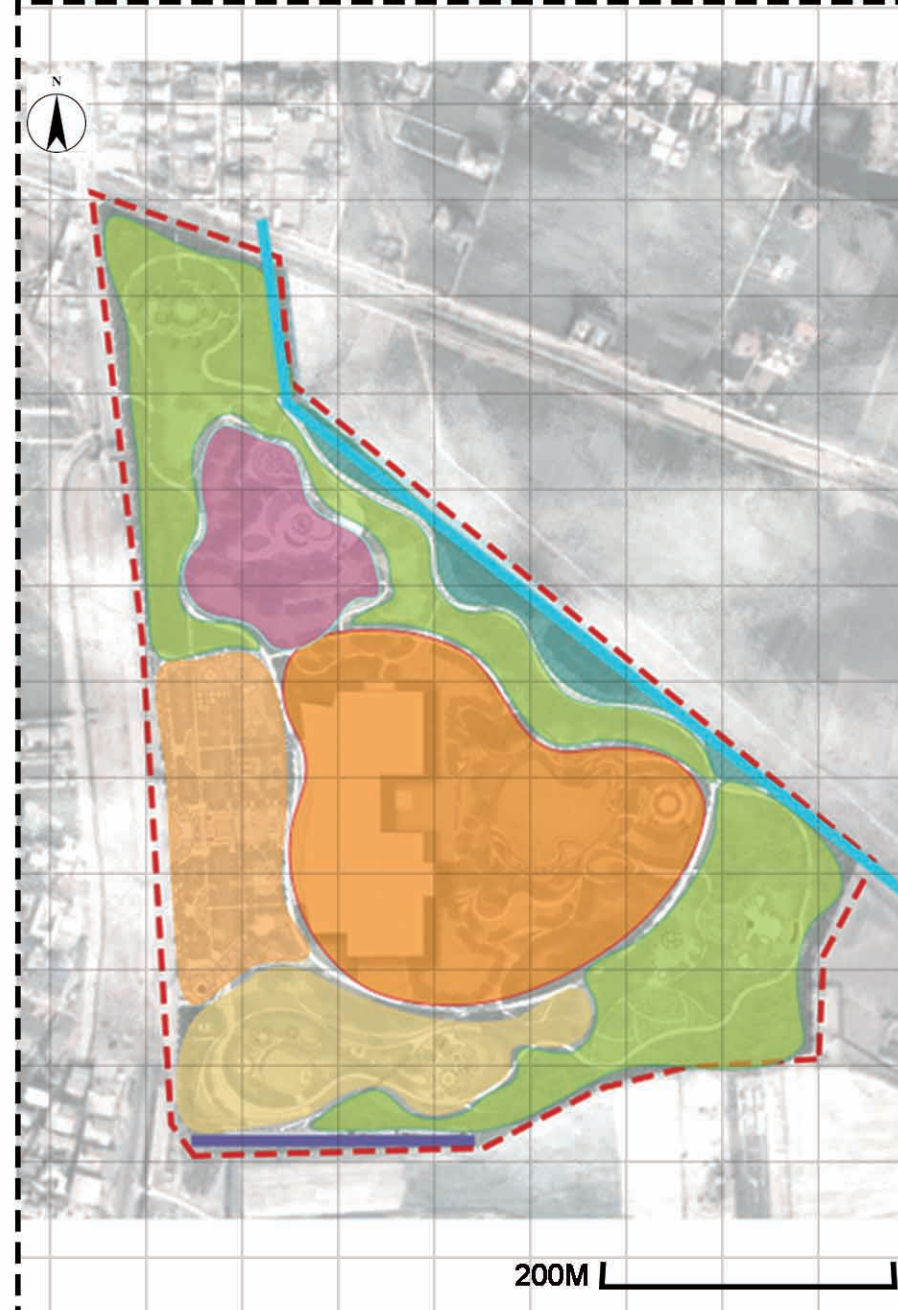
The park has two main entrances and a number of secondary entrances, with additional transportation stops on the east side to promote the use of public transportation, as well as the separation of pedestrian and vehicular traffic.



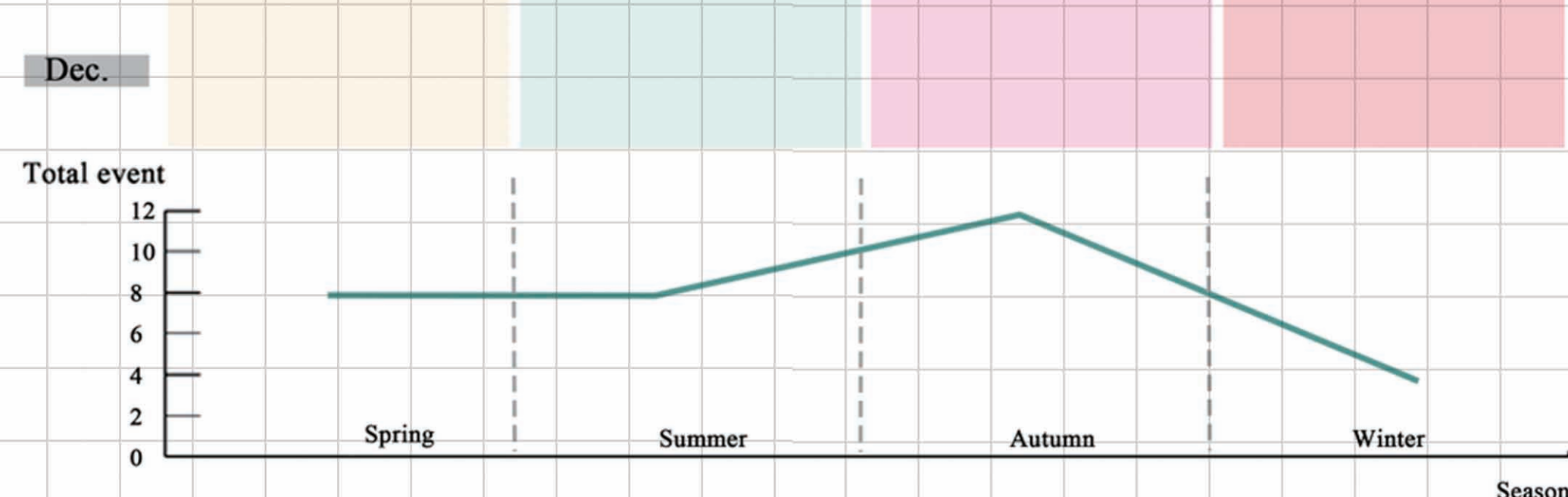
MASTER PLAN



CULTURAL EVENTS

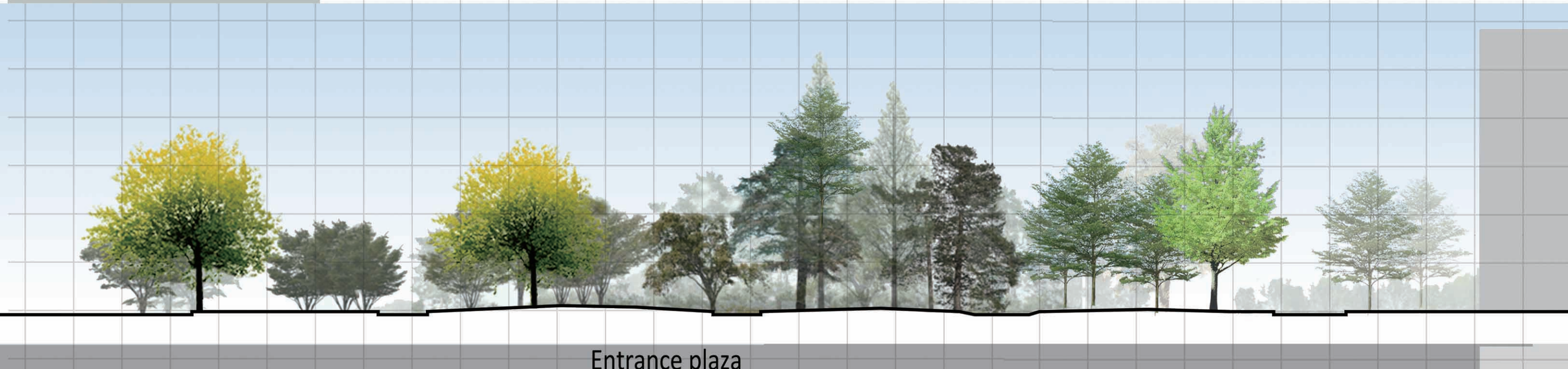


Month	Sports exercise	ecological forest	Leisure and entertainment	Culture and education
Jan. New Year	New Year's Eve performance	New Year's Eve performance		New Year's Eve performance
Feb. Chinese New Year Lantern Festival				Chinese New Year party
Mar.		walking	Spring flower viewing	
Apr. Ching Ming Festival	morning exercise	Plant Classroom	Kaifeng Embroidery Exhibition	Winter jasmine flower show
May.	outdoor fitness	small concert	Kaifeng Calligraphy Exhibition	Outdoor Sculpture Exhibition
Jun. children's day	roller skating	Plant Classroom	Pan drum performance	Yellow River Culture Science Exhibition
Jul. National Fitness		amphitheater	walking	amphitheater
Aug. Qixi Festival	walking	amphitheater		
Sep. Mid-Autumn Festival	dance fitness	Chinese Valentine's Day Lantern Festival	Appreciating Chrysanthemums in Mid-Autumn Festival	Appreciating Chrysanthemums in Mid-Autumn Festival
Oct. National Day		kite competition		firefly night
Nov.	fitness trail			
Dec.				



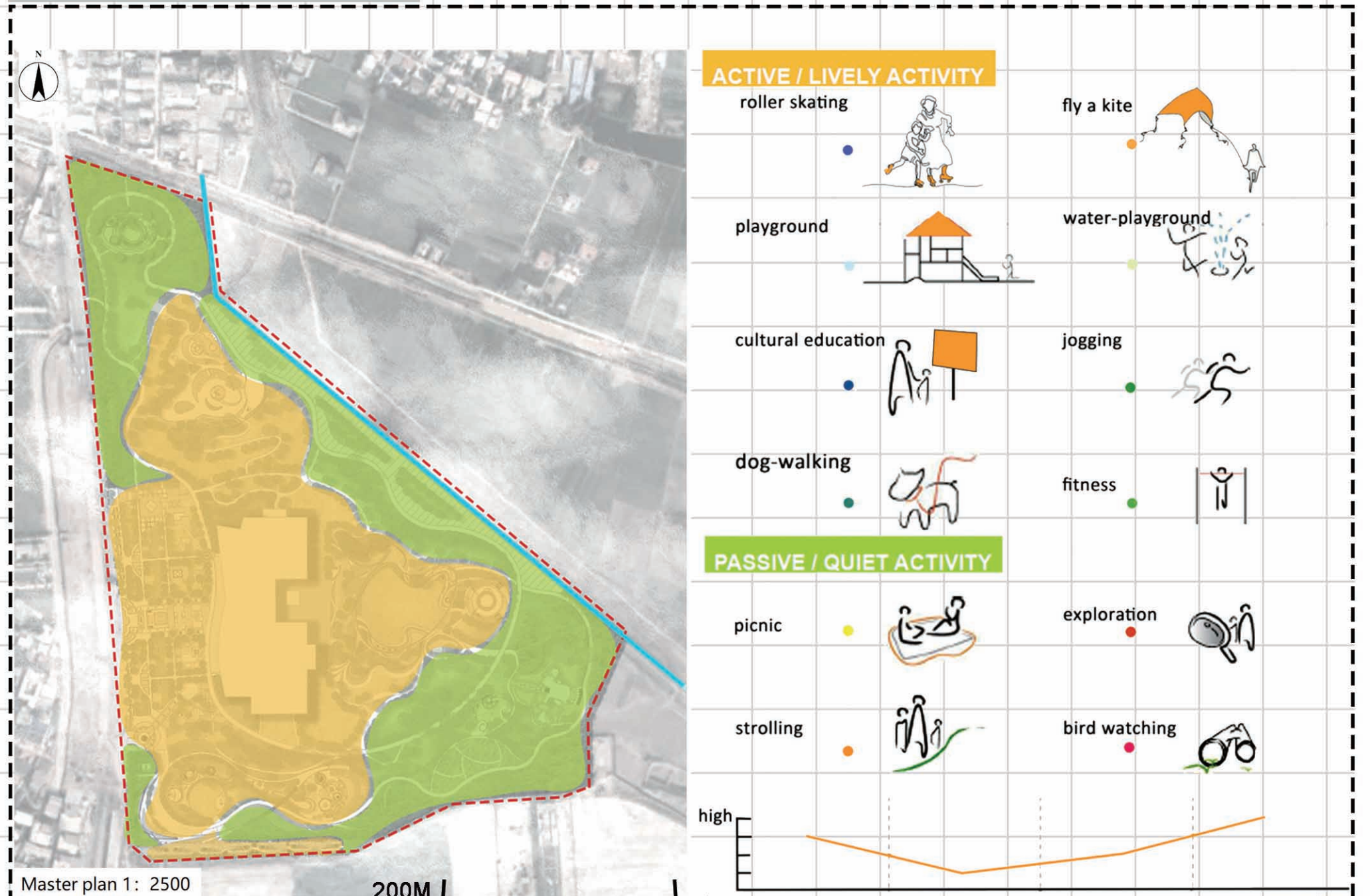
The shift of seasons and spatial layout will directly shape the management of activities in the scenic area. Enjoying chrysanthemums in the fall and holding calligraphy exhibitions in the summer, in response to the characteristics of different seasons, make full use of the landscape and space to enrich visitors' experience and enhance the attractiveness of the scenic spot.

SECTION



Entrance plaza

MAIN ACTIVITY TYPE



VEGETATION

According to the undulating terrain in nature, a dense and rich plant community is created.

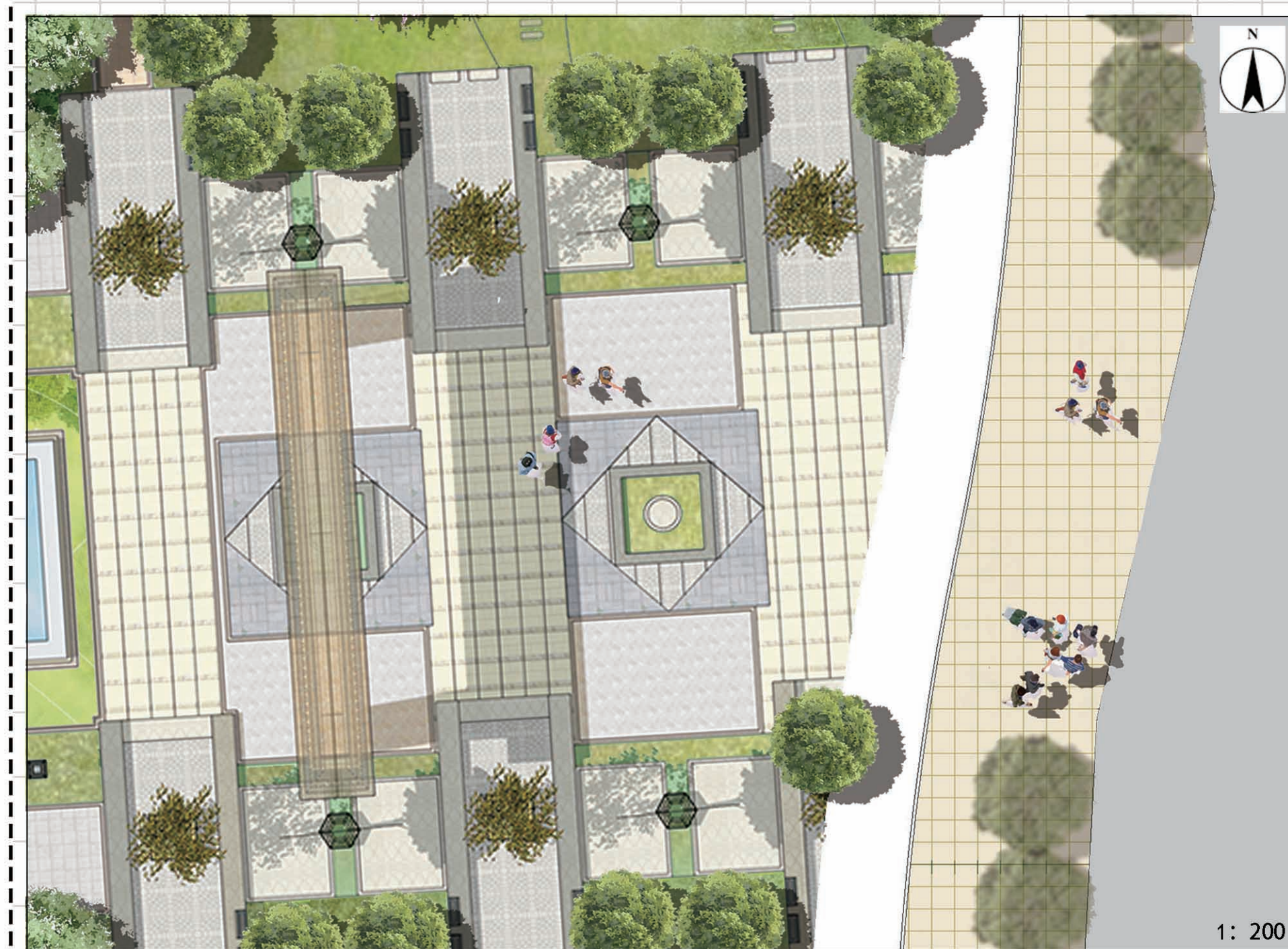
Based on the principle of giving priority to trees and supplementing by shrubs.

Planting grass in large quantities.

Species	Common name	Latin name	Height/m	Spread/feet	Main characters	USDA
evergreen broad leaf arbor	deodar cedar	Cedrus deodara	40.00 to 50.00	30.00 to 40.00	Tolerate Drought, Medium Maintenance	7 to 8
	Japanese black pine	Pinus thunbergii	20.00 to 60.00	12.00 to 20.00	Full sun, Medium Water, Tolerate Deer	5 to 8
	glossy privet	Ligustrum lucidum	12.00 to 20.00	12.00 to 20.00	Tolerate Dry Soil, Dry to medium Water	8 to 10
deciduous coniferous trees	Chinese water-pine	Glyptostrobus pensilis	60.00 to 90.00	40.00 to 60.00	Wet Water, Medium Maintenance, Tolerate Wet Soil	7 to 11
	bald cypress	Taxodium distichum	50.00 to 75.00	15.00 to 20.00	Full sun - Medium to wet Water, Tolerate Erosion, Air Pollution	4 to 9
	Siberian elm	Ulmus pumila	30.00 to 50.00	30.00 to 40.00	Full sun, Dry to medium Water, Tolerate Drought, Air Pollution	6 to 9
	Japanese pagoda tree	Sophora japonica	50.00 to 75.00	40.00 to 70.00	Full sun, Tolerate Deer, Clay Soil, Air Pollution	4 to 8
evergreen coniferous shrub	maidenhair tree	Ginkgo biloba	50.00 to 80.00	30.00 to 40.00	Medium Water, Tolerate Deer, Clay Soil, Air Pollution	3 to 8
	Chinese redbud	Cercis chinensis	8.00 to 15.00	6.00 to 12.00	Full sun to part shade, Tolerate Deer, Black Walnut	6 to 9
	Japanese honey-suckle	Lonicera japonica	15.00 to 30.00	3.00 to 6.00	Full sun to part shade, Tolerate Deer, Drought, Black Walnut	4 to 9
	Chinese silver grass	Miscanthus sinensis	4.00 to 9.00	3.00 to 6.00	Tolerate Deer, Drought, Erosion, Dry Soil, Black Walnut, Air Pollution	4 to 9



ENTRANCE PLAZA

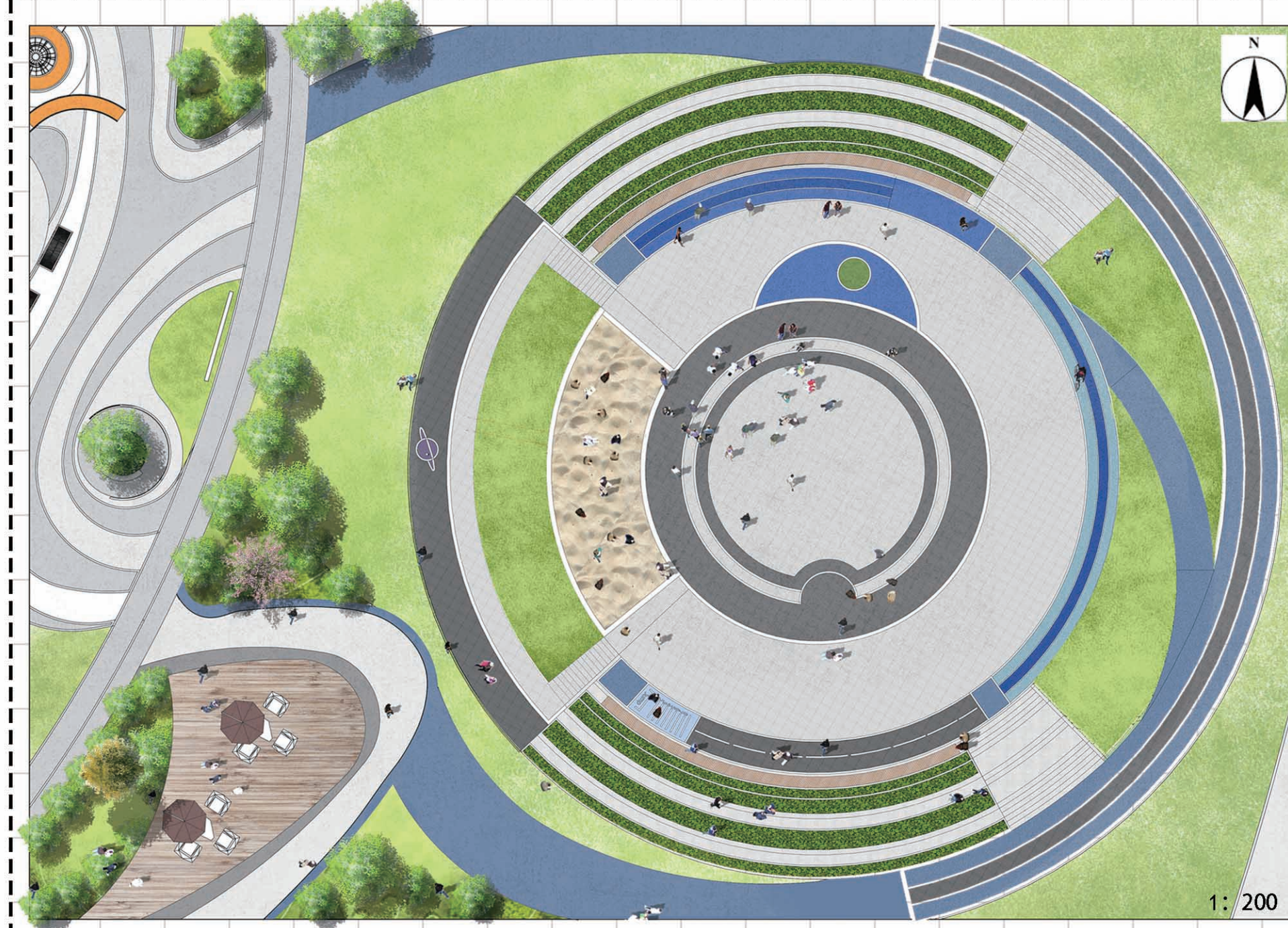


The main entrance plaza adopts a regular design, incorporating sculptures related to the Yellow River culture. These sculptures show the splendid history and rich culture of the Yellow River basin. The regular layout of the plaza will provide a neat and orderly environment for the visitors, and at the same time with the sculpture decoration of the Yellow River culture, it will make the plaza more characteristic and cultural connotation, and bring a unique visual experience for the visitors to enhance the knowledge and understanding of the Yellow River culture.



- Fraxinus chinensis Roxb.
- Paulownia tree
- Cerasus ssp.
- Beige bricks
- Concrete tiles Pavement

OUTDOOR THEATER



In the cultural and educational area, the model of an outdoor theater is adopted, providing an ideal place for holding various cultural activities. Activities such as calligraphy exhibitions and chrysanthemum exhibitions can be held here, allowing visitors to experience the charm of culture and art in a natural environment, and skillfully combining the Yellow River culture with the natural landscape to enhance visitors' cultural experience.



- Platanus orientalis Linn
- Pittosporum tobira
- Melia azedarach
- Blue Rubber Pavement
- Concrete tiles Pavement
- wooden

EXERCISE AREA



In the exercise area, according to the needs and fitness goals of different groups of people, aerobic exercise equipment and stretching equipment are installed to provide visitors with comprehensive fitness options. A spacious and comfortable resting pavilion is also designed to provide shade and resting places where visitors can relax, interact with others and feel the pleasant experience of fitness. This design not only promotes the popularization of healthy lifestyles, but also enhances the overall healthy atmosphere of the park.



- Sophora japonica Linn.
- Pinus bungeana Zucc.
- Syringa oblata Lindl.
- Colorful Rubber Pavement
- Concrete tiles Pavement



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