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Research on Low-Carbon Landscape Design of Jiashan Park in Mingguang City under the Carbon Neutrality Strategy

Qualification work for obtaining the SVO «Master»
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The qualification work contains the results of one's own research

The use of ideas, results and texts of other authors must be referenced to the appropriate source.

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INTRODUCTION

Against the backdrop of global carbon peaking and carbon neutrality goals, urban parks play an irreplaceable role in carbon sequestration, ecological restoration and public environmental science popularization. Medium-sizedcities in China are confrontedwith the practical demand of renovating existing park green spaces rather than carrying out large-scale new construction. Taking Jiashan Park in Mingguang City as the research object, this paper conducts low-carbon landscape design under the guidance of the “Smart Green Future” concept. Adopting literature review,fieldinvestigation, comparativecaseanalysisanddesignpractice, thisstudysortsoutdomesticandinternationalresearchprogresson low-carbon park landscapes and carries out site surveys of Jiashan Park.It identifies the site’s advantages including abundant water bodies and original green space resources, as well as existing problems such as monotonous plant configuration, insufficient waterfront ecological benefits, poor pedestrian connectivity and lack of intelligent low-carbon facilities. Drawing on the minimal-intervention renovation concept of relevant cases, comprehensive design strategies covering ecological restoration, low-carbon construction, intelligent management and public participation are proposed. The scheme retains the original water system andlargearborsastheecologicalbaseandformsa“one-belt,multi-node” spatialstructuredominatedbythewaterfrontlandscapebelt.Ecological

shoreline reconstruction, carbon-sequestering native plant communities, rainwater recyclingsystems and renewable low-carbonbuilding materials are adopted to reduce the whole-life-cycle carbon emissions of the park. Meanwhile, diverse thematic spaces including low-carbon artistic landscape bridges, intelligent runways, children's activity zones and waterfront nodes are created. A smart park system with multi-language touch-screen guides and carbon-point incentive applications is embedded to integrate ecological services, public recreation and environmental education.Thisdesignpracticeverifiesthatmoderatelow-carbonrenewal can effectively improve the ecological benefits and visitor experience of existing urban parks without thorough reconstruction. It provides replicable spatial layouts, technical measures and construction references forthelow-carbonrenewalofcomprehensiveparksinsimilarmedium-sized cities, and offers practical ideas for applying carbon neutrality concepts to urban landscape renovation.

Key words: carbon neutrality; low-carbon landscape; Jiashan Park; waterfront park; intelligent landscape; ecological renewa

SECTIONI.BackgroundoftheSubject

ResearchBackground

With the acceleration of global climate change and urbanization, citiesare facing increasing environmental challenges, including the urban heat island effect, resource depletion, ecological degradation, and risingcarbon emissions. Under these circumstances, urban green spaces have become increasingly important in improving environmental quality and supporting sustainable urban development. As highlighted in the project proposal, greater attention is now being given to the ecological functions and social value of urban parks, while low-carbon and sustainable park design has become an important direction for contemporary landscape architecture.

In China, the implementation of the national carbon neutrality strategyhas accelerated the transformation of urban green space planning. For many medium-sized cities, improving the quality of existing parks ismore practical than constructing entirely new ones. Mingguang City, located in Anhui Province, is currently experiencing continuous urban development, making the optimisation of its urban green space system increasingly important. As stated in the project background, innovative landscape design can not only improve environmental quality but also support the sustainable development of the city by enhancing ecological performance and public services.

Based on this background, Jiashan Park is selected as the design site for this study. The park possesses valuable natural resources, including existing water bodies and green landscapes, but its spatial organisation and ecological functions still have considerable potential for improvement. Therefore, this project proposes a low-carbon landscape design strategy that combines ecological restoration, sustainable technologies, and intelligent park facilities with the existing characteristics of the site. Rather than simply improving the appearanceof the park, the design aims to establish a healthier, more efficient, and environmentally sustainable public landscape that responds to the future development needs of Mingguang City.

PurposeofResearch

Theprimarypurposeofthisprojectistoexploretheapplicationof low-carbon and intelligent landscape design in urban parks through the redesign of Jiashan Park in Mingguang City. As stated in the project proposal, the design aims to establish a low-carbon urban park that responds to the ecological needs of the city while providing high-quality public space for daily recreation and social activities. Instead of treating ecological protection and public use as separate objectives, the project seeks to integrate environmental sustainability, intelligent technologies, andlandscapeexperienceintoaunifieddesignframework,thereby

creating a park that supports both urban development and ecological conservation.

To achieve this overall goal, three specific objectives are proposed. The first is to optimise the energy and resource management of Jiashan Park through the application of intelligent technologies, including smart management systems and environmentally efficient facilities. The second is to strengthen the ecological functions of the park by adopting sustainable planning strategies that improve the quality of vegetation, water resources, and landscape environments. The third is to encourage greater community participation by creating public spaces that support recreation, environmental education, and cultural activities. Throughthese objectives, the project aims to transform Jiashan Park into a sustainable urban landscape that combines ecological value, public service, and intelligent management while providing a practical example of low-carbon park design for medium-sized cities.

ResearchSignificance

The significance of this study lies in exploring a practical approach to integrating carbon-neutral concepts into the landscape renewal of urban parks. Taking Jiashan Park in Mingguang City as the research object, the project combines sustainable planning strategies with intelligent landscapetechnologiestoimprovetheecologicalqualityandpublic

service functions of the existing park. Compared with conventional park renovation projects that mainly focus on landscape appearance, this design pays greater attention to the coordinated development ofecological protection, resource efficiency, and public activities. Through the application of low-carbon design measures, the project aims to create a healthier and more sustainable urban green space that better responds to current environmental challenges.

From a practical perspective, the proposed design provides solutions to several issues identified during the site investigation. By introducing intelligent management technologies, optimising the ecological landscape system, and improving public activity spaces, the design enhances both the environmental performance and the usability of Jiashan Park. Strategies such as sustainable water management, ecological planting,and smart park facilities are integrated into the overall planning process, enabling the park to provide ecological, recreational, educational, and cultural functions simultaneously. These improvements not only increase the quality of the park environment but also create a more comfortable and interactive public space for local residents.

In addition, the project provides a reference for the renewal of urbanparks in medium-sized cities under the carbon neutrality strategy. Many existingparkssharesimilarproblems,includingageingfacilities,

insufficient ecological functions, and limited application of intelligent technologies. The design ideas proposed for Jiashan Park demonstrate how sustainable landscape principles can be combined with local environmentalcharacteristicstoachievelow-carbondevelopmentwithout fundamentally changing the existing ecological framework. Therefore, this study contributes not only to the improvement of Jiashan Park itself but also offers practical experience for future urban park design and sustainable landscape planning.

CurrentResearchStatusatHomeandAbroad

Research on low-carbon urban parks has received increasing attention worldwide as sustainable development has become a major focus ofurban planning and landscape architecture. International studies mainly concentrate on reducing carbon emissions through ecological planning, renewable energy, green infrastructure, and efficient resource management. Many researchers have explored the application of native vegetation, ecological water treatment systems, low-impact development, and intelligent management technologies in urban parks. These studies suggest that well-designed parks can improve biodiversity, regulate urban microclimates, reduce energy consumption, and enhance the resilience of urban ecosystems, while continuing to provide high-quality recreational spacesforthepublic.Thistrenddemonstratesthatlow-carbonlandscape

designhas gradually evolved froma theoretical concept into an important direction for practical landscape projects.

Researchin China has developedrapidly alongside theimplementation of thenationalcarbonreductionstrategy.Existingstudiesfocusprimarilyon reducing carbon emissions during park construction and operationthrough renewable energy utilisation, scientific land-use planning, rainwater management, ecological planting, and sustainable maintenance methods. Practical projects, such as Central Park in Suzhou Industrial Park, illustrate how ecological design can strengthen the relationship between humans and nature while improving the environmental performance of urban parks. These projects provide valuable experience for integrating low-carbon concepts into landscape design and demonstrate that ecological restoration and public recreation can be achieved simultaneously.

Although current research has produced many useful design strategies, relatively few studies focus specifically on the sustainable renewal of existing parks in medium-sized cities. Jiashan Park differs from many newly developed parks because the project emphasises optimising existing ecological resources rather than creating an entirely new landscape. Therefore, this study draws on previous research while adaptingrelevantlow-carbonstrategiestotheenvironmental

characteristics and development needs of Jiashan Park. Through the integration of ecological restoration, intelligent facilities, sustainable materials, and public space improvement, the project aims to transform theoretical research into a practical design proposal that is suitable for similar urban parks in medium-sized cities.

AnalysisofDesignCases

To provide a practical reference for the redesign of Jiashan Park, this study analyses representative landscape projects that successfully integrate ecological restoration with sustainable design. The selected case presentedin the projectproposal is locatedin Hongshan, Anshunand was designed by L&A Group in 2020. Rather than relying on large-scale reconstruction, the project adopted a strategy of minimally invasive intervention, preserving the original landscape while improving environmental quality and public accessibility. This design philosophy demonstrates that existing ecological resources can be effectively enhanced through careful planning instead of extensive redevelopment, offering valuable experience for the renewal of existing urban parks.



Another important characteristic of the case is its emphasis on adapting the design to local environmental conditions. The original terrain, vegetation, and spatial structure were retained as much as possible, allowingthelandscapetodevelopfromtheexistingecologicalfoundation instead of replacing it with entirely new elements. At the same time, principles such as ecological restoration, low maintenance, and sustainable management were incorporated throughout the project, reducinglong-termenvironmentalimpactswhilecreatingadiversepublic landscape. This approach reflects the idea that landscape design should respect natural processes and establish a balanced relationship between human activities and the surrounding environment.



The design concepts demonstrated in this case provide direct inspiration for the renewal of Jiashan Park. Similar to the Hongshan project, the proposed design for Jiashan Park does not pursue excessivereconstruction but instead focuses on improving the existing ecological environment through sustainable interventions. Existing water bodies, mature vegetation, and open green spaces are retained as the foundationof the design, while intelligent technologies, ecological restoration measures, and low-carbon landscape strategies are introduced to enhance environmental quality and public experience. By adapting successful design principles to the local conditions of Mingguang City, the project establishes a landscape that is both environmentally sustainable and responsive to the needs of local residents.

ProjectOverview

Jiashan Park is located in Mingguang City, Chuzhou, Anhui Province, China. Mingguang is situated in eastern Anhui Province and forms part of the Yangtze River Delta integration strategy. Owing to its location between the Nanjing and Hefei metropolitan areas, the city benefits from convenientregionaltransportationandcontinuouseconomicdevelopment.

According to the project information, the local economy has maintained stable growth in recent years, while coordinated industrial development and improvements in public services have created favourable conditions

for the construction of high-quality urban public spaces. In addition, the region experiences a subtropical monsoon climate, characterised by distinct seasonal variations in temperature and precipitation. These climatic conditions support diverse vegetation growth and provide a suitable natural environment for developing an ecologically sustainable urban park.

The project site is located on Qicang Road and occupies part of theformer Jiashan City Park. The existing landscape is characterised by an inner waterway, a small island located within the western section of the site, andalarger islandconnected tothe surroundingwater system. These natural features provide an important ecological foundation for the landscape renewal project and create opportunities for integrating waterfront recreation with ecological restoration. Rather than replacing the existing landscape, the design seeks to retain these valuable environmental resources and reorganise the park into an innovative cultural landscape that combines ecological protection, public recreation, and low-carbon development.

Based on the existing site conditions, the proposed design adopts the concept of creating a smart and low-carbon urban park. The project aims to optimise the spatial organisation of the original park while enhancing its ecological functions through sustainable landscape strategies. Existing

water bodies and green spaces are preserved and improved, andintelligent technologies are incorporated to strengthen environmental management andvisitorexperience.Byintegratingecologicalrestoration, public activity spaces, and low-carbon design measures into a unified planning framework, the project seeks to transform Jiashan Park into a contemporary urban landscape that reflects the development needs of Mingguang City while providing a practical example of sustainable park renewal.

SECTIONII.Section2ResearchContentsandMethods

ResearchContents

This study focuses on the low-carbon landscape design of Jiashan Park in Mingguang City under the carbon neutrality strategy. As presented in the project proposal, the research examines current trends in urban park planning, with particular emphasis on low-carbon development and sustainablelandscapedesign.Basedontheseconcepts,theprojectaimsto develop an innovative park that integrates ecological restoration, intelligent technologies, and public participation. Rather than concentrating solely on landscape aesthetics, the study explores how environmental performance and user experience can be improved simultaneously through appropriate planning and design strategies.



The research begins with a comprehensive analysis of the project site and the needs of the surrounding community. According to the project framework, the investigation includes an assessment of the geographical environment, such as climate, topography, soil conditions, and the existing ecological system of Jiashan Park. At the same time, community expectations for the future development of the park are collected through questionnaires,groupdiscussions,andotherformsofpublicparticipation. This combination of environmental investigation and social researchhelps identify the existing strengths and limitations of the site while providing a practical basis for subsequent landscape planning.



Based on the results of the site analysis and community investigation, the project develops a landscape design proposal that responds to both ecologicalrequirementsandpublicneeds.Thedesigncombineslow-carbon landscape principles with intelligent technologies to improve ecological quality, optimise spatial organisation, and enhance the overall visitor experience. Through this research process, the study aims to establish a practical design strategy for Jiashan Park while providing a referenceforthesustainablerenewalofurbanparksinother medium-sized cities.

ResearchMethods

To ensure the scientific validity and practical feasibility of the landscape design, this study adopts several complementary research methods throughout the design process. The first method is literature review,which provides the theoretical foundation for the project. By reviewing domestic and international studies on low-carbon park planning and sustainable landscape design, the research summarises recent theoretical developments and practical experiences. Typical cases are analysed to identify successful design strategies, existing problems, and possible optimisation approaches. The knowledge obtained from previous studies provides important guidance for the planning and design of Jiashan Park while strengthening the theoretical basis of the project.

The second method is field investigation, which focuses on the existing conditions of Jiashan Park. Through on-site observation, photography, field recording, and environmental investigation, basic information regarding the terrain, vegetation, water system, ecological environment, and climatic characteristics of the site is collected. These first-hand data allow a comprehensive understanding of the current landscape conditions andhelpidentifythe majorecological andspatial problemsthatshouldbe addressed in the design proposal. At the same time, community questionnaires andinterviews areconductedto understandlocal residents' preferences, daily activities, and expectations for the future development of the park. Public participation ensures that the proposed designresponds not only to environmental requirements but also to the actual needs of park users.

The final method is the comparative analysis of successful low-carbon park projects. Representative domestic and international cases are examined to extract design elements, management approaches, and operational models that can be adapted to the local conditions of Jiashan Park. By comparing different landscape practices, the study identifies strategies that are both environmentally sustainable and suitable for medium-sized cities. The information collected through literature review, field investigation, public participation, and case analysis is then integratedintotheoveralldesignprocess,providingacomprehensive

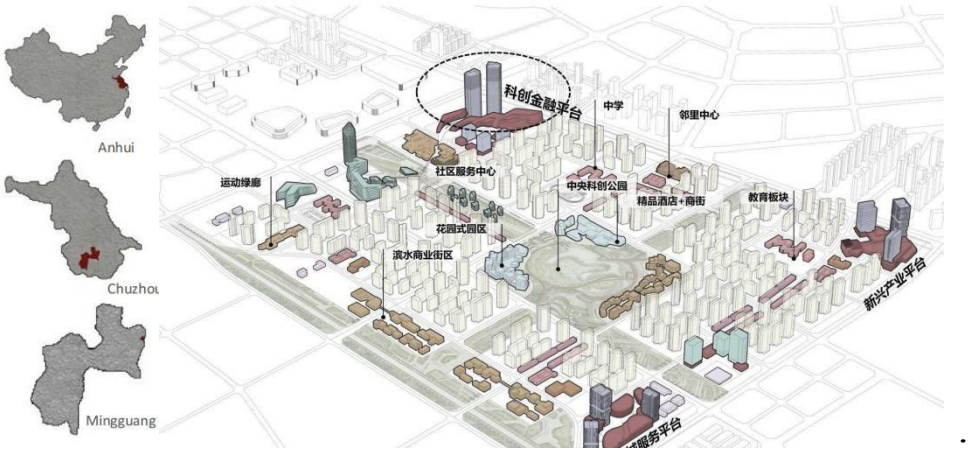
methodologicalframeworkforthelow-carbonlandscaperenewalof Jiashan Park.

CHAPTERIII.TheContentoftheResearch

LocationAnalysis

Jiashan Park is located in Mingguang City, which is administered by Chuzhou City in the eastern part of Anhui Province. According to the project analysis, Chuzhou occupies an important geographical position between the Nanjing Metropolitan Area and the Hefei Economic Circle, while also serving as an important node within the Yangtze River Delta integration strategy. Benefiting from this regional layout, MingguangCity enjoys convenient inter‑city transportation links and sustainedsocio‑economic growth, bringing new demands for high‑quality urban public space construction and ecological environment optimisation. This advantageous regional location has promoted continuous economic development and strengthened transportation connections with surroundingcities,providingfavourableconditionsforurbanconstruction and the improvement of public green spaces. Rapid urban expansion has raised residents' expectations for park functions, requiring local green spaces to undertake multiple missions including ecological regulation, daily recreation and environmental‑science popularization. As one of the representativeurbanparksinMingguangCity,JiashanParkplaysan

important role in the local ecological landscape system and contributes to the improvement of the urban living environment. Situated in the eastern core urban zone, the park carries the dual tasks of preserving existing naturalresourcesandupgradingpublicservicecapacity.Itsgeographical conditionmakesitanessentialecologicaltransitionbeltbetweenbuilt-up residential blocks and urban open-space networks. Therefore, carrying out low-carbon-oriented renewal for Jiashan Park can not only satisfy localcitizens'growingleisureneeds,butalsohelpimplementthe regional carbon-neutrality goals by improving urban carbon-sink capacity.



From the perspective of urban development, Mingguang City has gradually formed three major functional areas, namely the science and education new town, the industrial landscape area, and the natural landscape area. These functional zones jointly shape the city's spatial structure and influence the distribution of public open spaces. Jiashan Park is closely connected with the surrounding urban environment and providesanimportantecologicaltransitionbetweenbuilt-upareasand

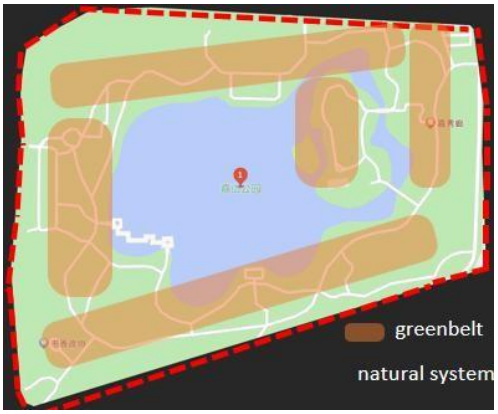
natural landscapes. At the same time, the convenient transportation network enables residents from different parts of the city to access the park easily, allowing it to serve not only as a recreational destination but also as an essential component of the urban ecological network.

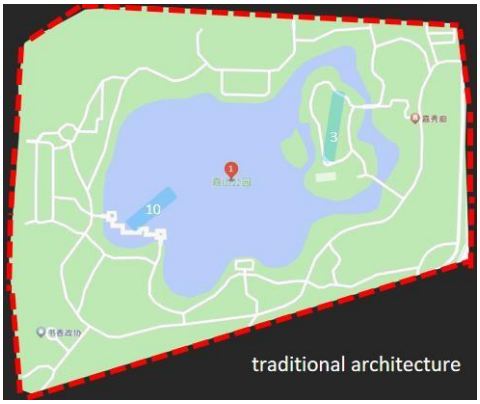
The regional advantages of Mingguang City also provide favourable conditions for implementing the proposed low-carbon landscape design. Asurbandevelopment continues, improvingthe qualityof existingpublic parks has become an effective approach to enhancing environmental quality without occupying additional land resources. Therefore, the redesign of Jiashan Park is intended to make full use of its geographical location, existing ecological resources, and transportation accessibility while introducing sustainable landscape strategies that support future urban development. By integrating ecological restoration with public recreation, the project seeks to establish a modern urban park that reflects both the environmental characteristics and development objectives of Mingguang City.

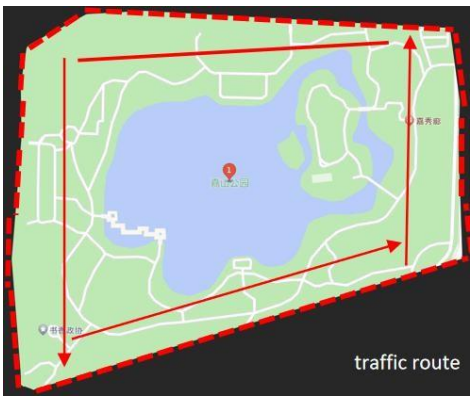
SiteCognition

A comprehensive understanding of the site is essential for developing an appropriate landscape design strategy. Jiashan Park covers an area of approximately 4 hectares and is located in the eastern core area of MingguangCity.Accordingtothesitesurvey,theparkoccupiesa

favourable urban position with convenient accessibility. The western boundary is adjacent to one of the city's main roads, ensuring efficient transportation and a high level of public accessibility. To the north liesthe Mingguang Municipal People's Government, while residential communities are distributed on the eastern side of the site. This location enables the park to serve notonly as an ecological greenspace but alsoas an important public activity area that connects administrative, residential, and urban functional zones.







The surrounding environment provides diverse spatial resources that influence the future development of the park. Open spaces and existing green areas contribute to the ecological continuity of the site, while the nearby emerging industrial base reflects the ongoing urban development of Mingguang City. In addition, the surrounding transportation network ensures convenient access for residents and visitors, increasing the park's potential as a daily recreational destination. The coexistence of natural systems, traditional architectural elements, and urban infrastructure creates opportunities to integrate ecological conservation with public activities while maintaining a balanced relationship between the park and its urban context.

The site cognition indicates that Jiashan Park possesses favourable externalconditionsforlow-carbonlandscaperenewal.Itscentrallocation, convenient transportation, and surrounding public facilities provide a stable user base, while the existing green spaces and natural systems establish a strong ecological foundation for future design interventions. Therefore,thesubsequentdesignfocusesonstrengtheningthe

relationship between the park and its surrounding urban environment through ecological restoration, spatial optimisation, and sustainable landscape strategies, allowing Jiashan Park to function as both an ecological node and a high-quality public open space within Mingguang City.

ResourceAnalysis

The existing landscape resources of Jiashan Park provide a favourable foundationforimplementingalow-carbonrenewalstrategy.Accordingto the site investigation, the park contains a relatively complete ecological framework composed of water bodies, existing woodland, open lawns, and public activity spaces. These natural elements not only contribute to the environmental quality of the site but also create opportunities for improving biodiversity and strengthening ecological connectivity. Compared with constructing a completely new park, making full use of the existing ecological resources can effectively reduce construction disturbance and lower the carbon emissions associated with landscape renewal.



Amongtheexistingresources,thewaterfrontlandscapeisoneofthemost valuable natural assets of Jiashan Park. The water system improves the visual quality of the park while providing favourable conditions for ecological restoration and rainwater management. Existing woodland areas also contribute to the ecological stability of the site by providing shade, improving the microclimate, and supporting local biodiversity. In addition, the relatively open terrain allows the flexible organisation of public spaces and circulation systems, making it possible to integrate ecological protection with recreational activities. These characteristics establish a strong environmental foundation for the subsequent design proposal.



Besidesitsnaturalresources,theparkalsobenefitsfromfavourableurban resources. Its location within the eastern urban area of Mingguang City enables convenient access from surrounding residential districts and public facilities, providing a stable user base for daily recreation. The combination of ecological resources and urban accessibility creates favourable conditions for developing a multifunctional public landscape. Therefore, the proposed design focuses on preserving these existing advantages while enhancing ecological performance through sustainable planting, intelligent technologies, and low-carbon landscape strategies, ensuring that the future development of Jiashan Park is both environmentally responsible and socially responsive.

StatusAnalysis

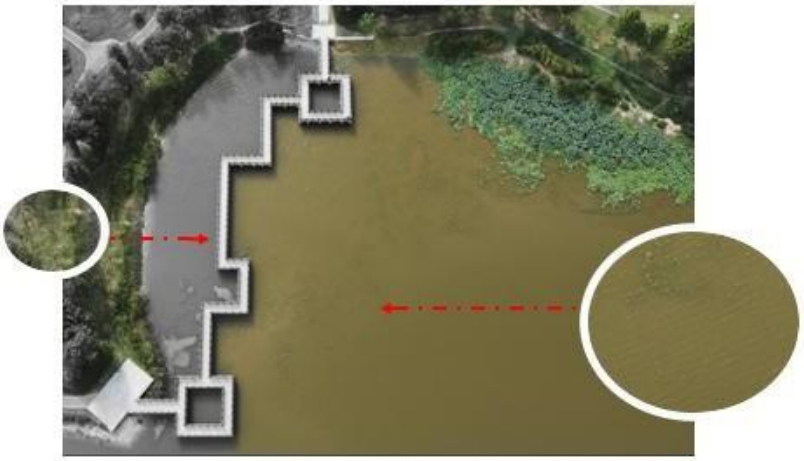
The site investigation indicates that Jiashan Park already possesses a relatively complete ecological framework; however, several problems limit its environmental performance and recreational quality. Although the existing water bodies and green spaces provide valuable ecological resources, the landscape structure lacks clear functional organisation. Some activity spaces are weakly connected, resulting in an inconsistent visitor experience and reducing the overall efficiency of the park. In addition, several public facilities have gradually become outdated and no longer satisfy the increasing demand for diverse outdoor activities. These

conditions suggest that the park requires systematic renewal rather thanisolated improvements to individual facilities.



▲The plant configuration is monotonous.

From an ecological perspective, the current landscape has not fully utilised its natural resources. Existing vegetation is unevenly distributed, and the ecological connection between different green spaces remains relatively weak. The waterfront area, despite being one of the most distinctive landscape features of Jiashan Park, has not been effectively developed as an ecological or recreational resource. Opportunities to improve biodiversity, strengthen ecological corridors, and enhance rainwater management are therefore not fully realised. As a result, the ecologicalpotentialoftheparkhasnotbeen translatedintocorresponding environmental benefits.



▲The vegetation along the water and the water body configuration are scarce

The analysis also shows that low-carbon and intelligent landscape technologies are rarely reflected in the existing park. Facilities related to energy conservation, rainwater recycling, smart management, and environmental interaction are largely absent, limiting the park's ability to support sustainable urban development. Based on these findings, the renewal of Jiashan Park should focus on ecological restoration, spatial optimisation, and the integration of low-carbon technologies while preserving the site's existing environmental advantages. These conclusions provide the basis for the design concepts and strategies presented in the following sections.

SolvingIdeas

Based on the analysis of the existing conditions of Jiashan Park, the project proposes a series of design responses that address the identified ecologicalandspatialproblemswhilepreservingthevaluablenatural

resources already present on the site. Instead of adopting a strategy of large-scale reconstruction, the design focuses on optimising the existing landscape framework and improving the relationship between ecological systems and public activity spaces. This approach not only reduces construction disturbance and carbon emissions but also allows the park to maintain its original landscape character while adapting to contemporary environmental and recreational needs.

The proposed renewal strategy places particular emphasis on the integration of ecological restoration and intelligent landscape technologies. Existing water bodies and green spaces are retained as the ecological foundation of the park, while sustainable measures such as ecological shoreline improvement, permeable paving, rainwater collection, and native planting are introduced to enhance environmental performance. At the same time, intelligent facilities are incorporated to improve park management and visitor experience, creating a public landscape that combines environmental sustainability with modern urban services. These interventions correspond directly to the project's overall objective of developing a low-carbon and intelligent urban park.

Rather than treating ecological protection, recreation, and smart technologies as independent design elements, this project integrates them intoaunifiedplanningframework.Theproposedsolutionsseekto

improve ecological quality, optimise spatial organisation, and create diverse public activity spaces while supporting the long-term sustainable development of Jiashan Park. Through this integrated design approach, the park is expected to become an environmentally responsible public landscape that better serves both the city and its residents.

DesignVision

The design vision of Jiashan Park is to establish a modern urban park that reflects the concept of "Smart Green Future", combining low-carbon landscape design with intelligent technologies to create a sustainable public space. Rather than pursuing highly artificial landscape forms, the project aims to build upon the site's existing ecological resources, allowing natural systems to become the foundation of future landscape development. By strengthening the relationship between ecological restoration and public use, the design seeks to create a park that supports recreation, environmental education, and ecological conservation simultaneously.

Guided by this vision, the project promotes the coordinated development of ecological protection, intelligent management, and community participation. Sustainable materials, native vegetation, rainwater recycling, and energy-efficient facilities are incorporated into the overall planningprocess,whileintelligenttechnologiesimproveenvironmental

management and visitor services. These strategies allow Jiashan Park to respond to current environmental challenges while creating a healthier and more comfortable recreational environment for local residents. The vision is therefore not limited to improving the physical landscape but also aims to establish a sustainable model for future urban park development in Mingguang City.



DesignStrategy

To achieve the proposed design vision, the project establishes an integrated landscape strategy based on ecological restoration, low-carbon development, intelligent management, and public participation. Existing natural resources are regarded as the foundation of the design, while spatial organisation is optimised to improve accessibility and strengthen the relationship between different functional spaces. Through this strategy, ecological systems and recreational activities are combined within a coherent landscape framework that supports both environmental quality and public use.

The ecological strategy focuses on improving biodiversity and environmental resilience through native planting, ecological waterfront restoration, rainwater utilisation, and sustainable landscape construction. At the same time, the low-carbon strategy emphasises the application of permeable materials, energy-efficient facilities, and environmentally responsible management methods to reduce the environmental impact of the park throughout its life cycle. Intelligent technologies, includingsmart lighting and digital management systems, are integrated into the design to improve operational efficiency and visitor experience.

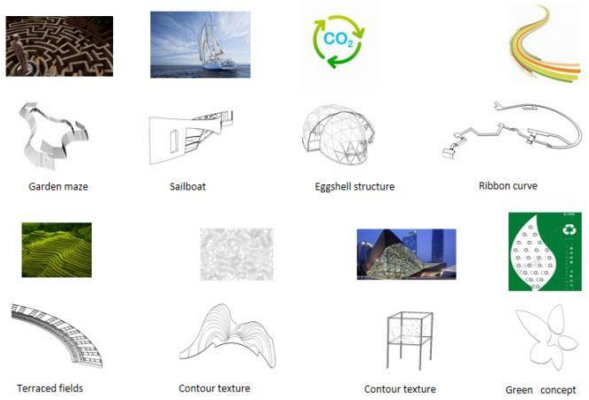
Together, these strategies establish the overall design direction forJiashan Park and provide the foundation for the detailed landscape proposal presented in the following chapter. Rather than introducing isolated design measures, the project combines ecological, technological, and social considerations into a unified landscape system, ensuring that every design intervention contributes to the long-term sustainable development of the park while reflecting the overall concept of "Smart Green Future".

CHAPTERIV.InterpretationofthePlan

ElementExtraction

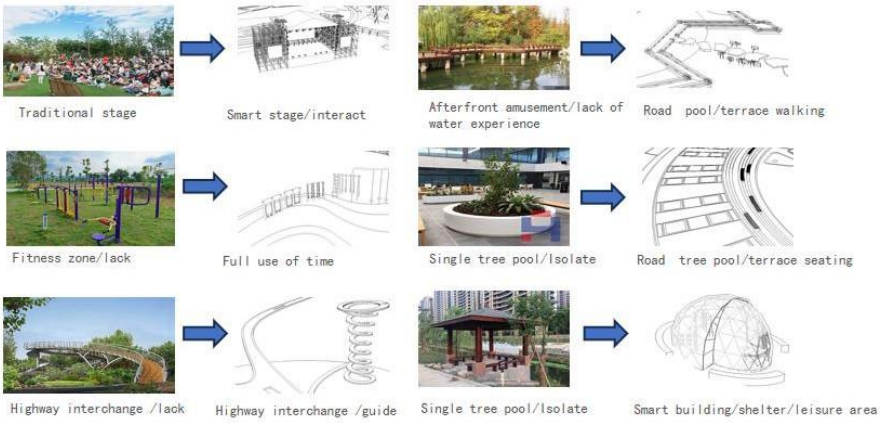
The design of Jiashan Park is based on the extraction and transformation ofkeyelementsidentifiedduringthesiteanalysis.Ratherthan

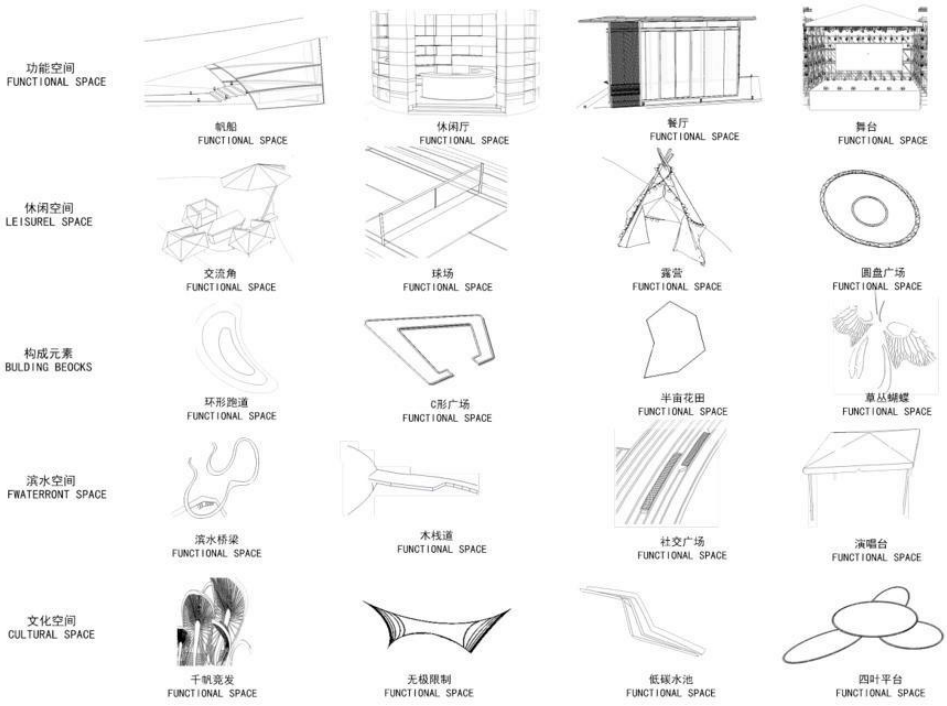
introducing completely new landscape forms, the project selects representative ecological, spatial, and technological elements from the existing environment and reorganises them into a contemporarylandscape language. This approach preserves the original character of the site while allowing the park to respond to the objectives of low-carbon development and sustainable urban renewal. Through element extraction, the design establishes a clear relationship between the existing landscape resources and the proposed spatial interventions, ensuring that the final scheme reflects both the environmental characteristics of Jiashan Park.



The extracted design elements mainly include ecological landscape elements, intelligent technology elements, sustainable material elements, and public activity elements. Ecological elements are represented by the existing water system, green spaces, and vegetation, which form the environmentalfoundationoftheproject. Intelligentelementsarereflected in the introduction of smart park facilities and digital management systems to improve operational efficiency and visitor experience. Sustainablematerialsareselectedtoreduceenvironmentalimpact

throughout construction and maintenance, while public activity elements are organised to strengthen interaction between visitors and the landscape. These elements are not applied independently but are integrated throughout the planning and design process to create a coherent landscape system.





Byextractingandreorganisingthesedesignelements,theprojecttransformstheexist ingcharacteristicsofJiashanParkintoamodern

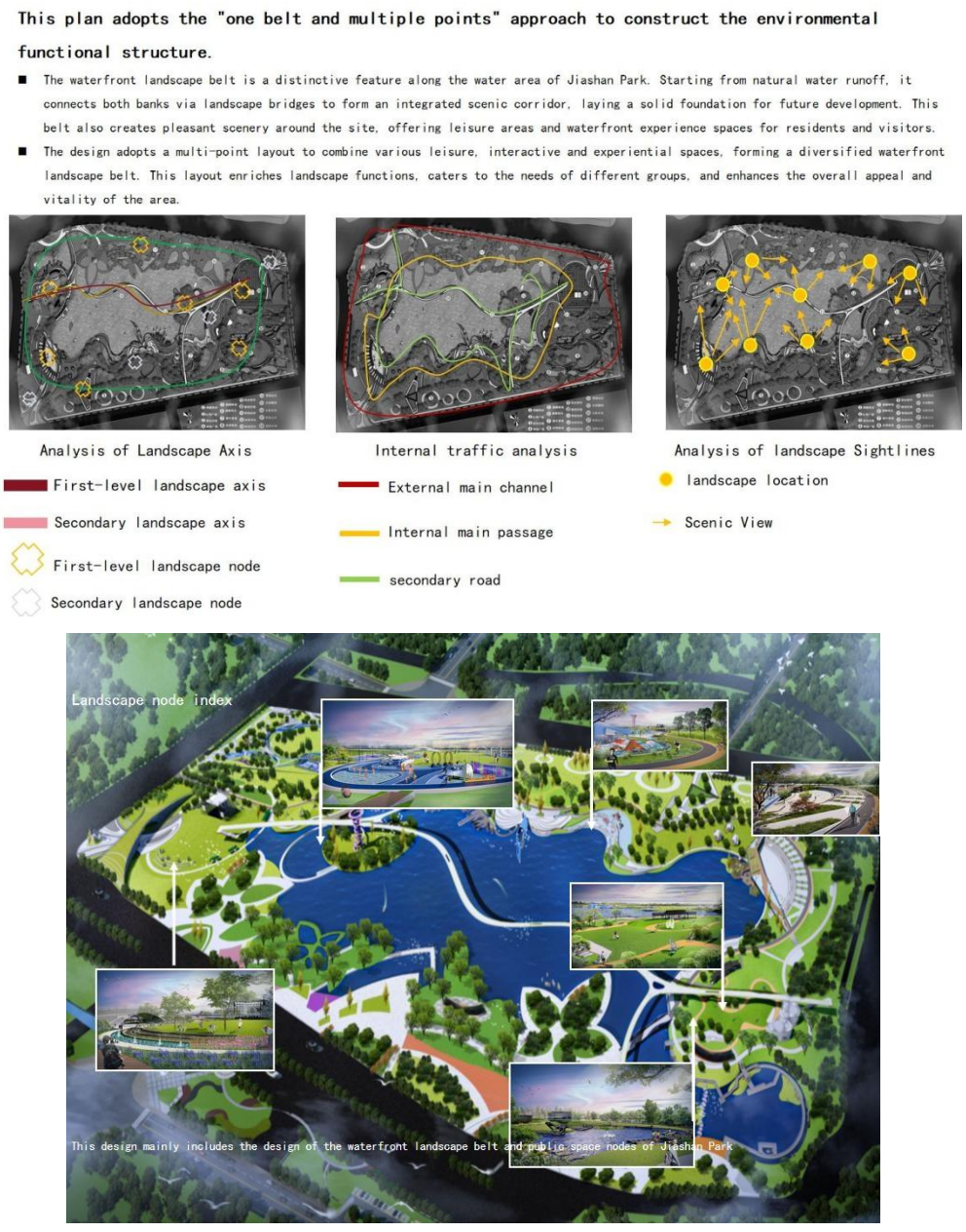
landscape that combines ecological sustainability with intelligent management. The process of element extraction also provides the design basis for the subsequent landscape proposal, ensuring that every spatial intervention is directly connected to the environmental conditions and development objectives identified during the previous site analysis. Inthis way, the design maintains continuity between analysis and proposal while reinforcing thelow-carbon principles that guide theoverall renewal of Jiashan Park.

EffectDemonstration

The proposed landscape design for Jiashan Park is developed under the concept of Low-Carbon Landscape Design, integrating ecological restoration, intelligent technologies, and low-carbon design principlesintoa unifiedspatialsystem. Rather than changingthe existingecological framework of the site, the design optimises the current landscape pattern through selective interventions that improve environmental quality and visitor experience. The overall master plan retains the existing water system as the ecological core of the park while reorganising surrounding activity spaces to strengthen the relationship between nature and public life. This strategy creates a continuous landscape environment where ecological conservation and recreational activities can coexist harmoniously.



The proposed landscape enhances the visual identity of Jiashan Park by combining modern landscape forms with sustainable environmental strategies. Existing green spaces are reorganised to create more continuous ecological corridors, while open activity areas are arranged to encourage social interaction and outdoor recreation. The waterfront remains the most important visual focus of the park, with improved shoreline treatments and viewing spaces providing stronger connections between visitors and the natural environment. Intelligent facilities are integrated into the landscape without disrupting its natural character, allowing technological systems to support environmental management while maintaining a comfortable public atmosphere.



From the perspective of environmental performance, the proposed design demonstrates how low-carbon landscape principles can be incorporatedthroughoutthepark.Sustainablematerials,nativevegetation, permeable paving, rainwater management, and intelligent energy-saving facilities are applied in different parts of the site according to functional requirements. These measures not only improve ecological resilience but also reduce long-term maintenance costs and environmental impacts. The

overall design therefore reflects the project's objective of establishing Jiashan Park as a modern urban park that combines ecological sustainability, intelligent management, and high-quality public space under the carbon neutrality strategy.

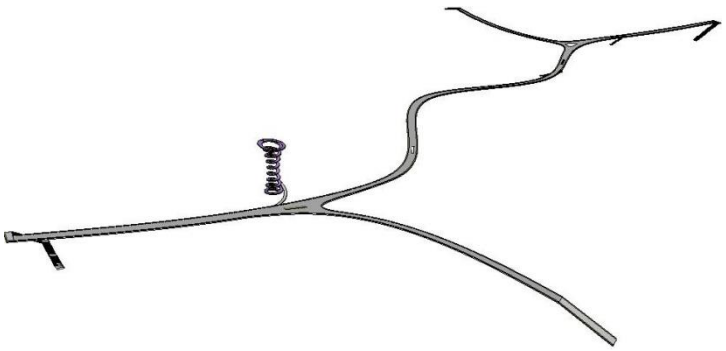
SpecialTopicDesign

Low-carbonPublicArtforLandscapeFacilities

The design of the landscape facilities is developed around the theme of carbon neutrality, transforming abstract environmental concepts into recognisable spatial elements. Instead of treating bridges as simple circulation structures, the project integrates public art with landscape designtocreatesymbolicfacilitiesthatcommunicatetheconceptof low-carbon development. This approach strengthens the visual identity of Jiashan Park while allowing visitors to experience the design theme through everyday movement within the park. The landscape facilities therefore perform both practical and educational functions, becoming an important component of the overall design concept.

A key feature of this proposal is the design of the water-crossing bridges. According to the design concept presented in the project, the bridges adopt a flowing curved form inspired by the carbon development pathway from 2020 to 2060. Rather than using conventional geometric structures,thebridgeprofilesymbolisesthegradualtransitiontowards

carbon peaking and carbon neutrality. The continuous curve not only creates a distinctive visual landmark but also reinforces the relationship between landscape form and environmental philosophy. In this way, the bridgebecomesathree-dimensionalexpressionoftheproject's low-carbon theme rather than merely serving as a transportation facility.



The bridge design also considers environmental performance and visitor experience. The gently curved alignment improves the continuity of pedestrian movement while creating changing views towards the surrounding water landscape. At the same time, the bridge is integrated with the overall circulation system, connecting different activity spaces and enhancing accessibility throughout the park. By combining symbolic form, functional efficiency, and ecological awareness, the landscape facility demonstrates how public art can become an effective medium for communicating sustainable development concepts within an urban park. As a result, the bridge serves not only as an infrastructure element butalso as an important landmark representing the identity of Jiashan Park under the carbon neutrality strategy.

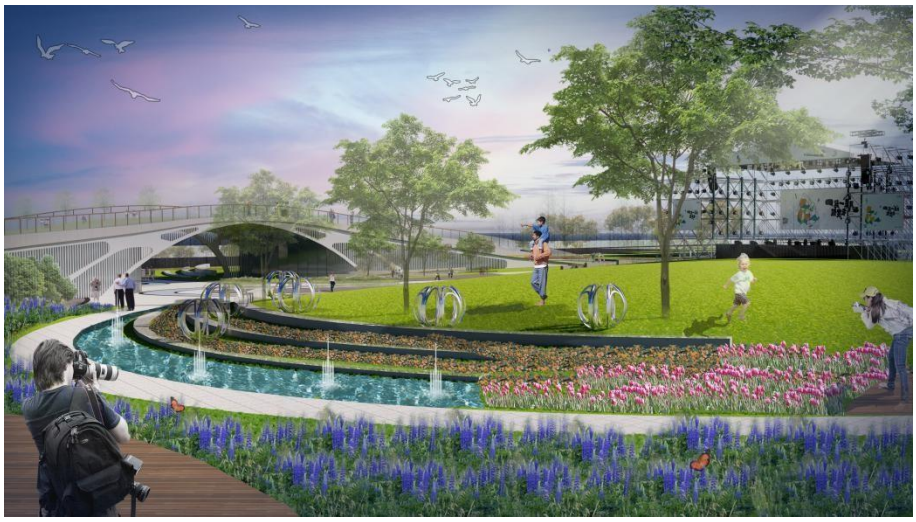
Low-carbonRunway

The low-carbon runway is designed as an intelligent fitness space that combines outdoor exercise with sustainable landscape principles. Rather than functioning only as a jogging path, the runway is intended to provide an environmentally friendly recreational facility that encourages healthy lifestyles while promoting public awareness of carbon reduction. Byintegratinglow-carbonconcepts intoadailyexercise environment,the design allows visitors to experience sustainable development through routinephysicalactivities,makingenvironmentalprotectionanaturalpart of everyday life.



In accordance with the project proposal, the runway is constructed using renewable materials and energy-saving technologies to improve durability while reducing environmental impact during long-term operation. An intelligent shopping system is incorporated into the design, enabling visitors to purchase environmentally friendly products through a

mobile application. In addition, a carbon points mechanism is introduced to encourage participation in low-carbon activities. Visitors whocomplete running activities or engage in environmentally responsible behaviours can accumulate carbon points and exchange them for environmental gifts or shopping coupons. This interactive system transforms the traditional running track into a smart public space that combines recreation, environmental education, and digital management.



The low-carbon runway also strengthens the relationship between intelligent technology and public participation. Instead of passively presenting sustainable concepts,the design encourages visitors to become active participants in low-carbon living through an incentive-based system. By integrating sports, smart services, and environmental awareness into one landscape space, the runway becomes more than a circulation route; it serves as an important demonstration of the project's "SmartGreenFuture" conceptand illustrates howintelligent technologies can support the long-term development of sustainable urban parks.

GeniusSpace(Children'sLeisureActivitySpace)

The Genius Space is designed as a dedicated activity area for children, providing a safe, comfortable, and interactive environment where recreation can be combined with learning and environmental awareness. As an important component of Jiashan Park, this space is intended to encourage outdoor activities while strengthening children's connection with nature. Instead of relying solely on conventional playgroundequipment, the design creates an open landscape environment in which play, exploration, and ecological experience are closely integrated. Through this approach, the activity space supports children's physical development while encouraging greater appreciation of the natural environment.

The spatial layout emphasises accessibility, safety, and interaction. Open activity areas are combined with surrounding green landscapes to provide sufficient space for different age groups, while planting design creates a pleasant microclimate by providing shade and seasonal visual interest. Landscape facilities are arranged according to children's behavioural characteristics, allowing movement, rest, and social interaction to occur naturally within the space. The design also strengthens the relationship between recreation and environmental education by enabling children to experience ecological landscapesduringeverydayoutdooractivities,reflectingtheoverallconceptof

integratingpublicspacewithsustainablelandscapedesign.



In addition to improving recreational quality, the Genius Space contributes to the social value of Jiashan Park by creating an inclusive public environment for families. Parents and children are encouraged to participate in outdoor activities together, increasing the utilisation of the park while promoting community interaction. Through the combinationof ecological planting, child-friendly landscape facilities, and an open spatial organisation, the activity area becomes an important public space that supports healthy lifestyles and reflects the project's low-carbon and people-oriented design philosophy.

IntelligentWaterfront

The Intelligent Waterfront is designed as one of the key landscape spaceswithinJiashanPark,whereecologicalrestorationiscombinedwith intelligent management to create a more sustainable and interactive waterfront environment. According to the design proposal, the waterfront

is not only an important ecological resource but also one of the main public activity areas of the park. Therefore, the design focuses on improving both environmental quality and visitor experience by integrating smart technologies with the existing waterside landscape. The waterfront is planned as a multifunctional public space where recreation, ecological protection, and environmental education can be experienced simultaneously.





Based onthe existingwaterfrontconditions, thedesignoptimises the shorelineenvironmentwhilemaintainingthe originalecologicalcharacter ofthesite.Watersidewalkwaysandviewingplatformsstrengthenthe

connection between visitors and the lake, allowing people to appreciate the landscape from different perspectives. At the same time, intelligent facilities are incorporated into the waterfront space to improve daily management and enhance user convenience. These facilities operate together with the park's smart management system, providing a safer, more efficient, and environmentally friendly public environment while maintaining the natural atmosphere of the waterfront.



The Intelligent Waterfront also reflects the project's low-carbon design philosophy. Ecological planting is used to improve the environmental quality of the shoreline, while sustainable construction materials and energy-efficient facilities reduce the environmental impact of the landscape throughout its life cycle. By integrating ecological restoration with intelligent technologies, the waterfront becomes both a representative landscape feature of Jiashan Park and an important demonstration of the "Smart Green Future" concept. The design shows howmoderntechnologycansupportecologicalconservationwithout

changing the natural character of the site, creating a balanced relationship between people, water, and the surrounding landscape.



SmartParkSystem

The Smart Park System is proposed as an important component of the overall landscape design, aiming to improve the efficiency of park management while providing more convenient public services. Rather than applying intelligent technology as an independent feature, the design integrates digital management with the daily operation of Jiashan Park, allowing environmental monitoring, public services, and visitor interaction to function within a unified system. In this way, intelligent technology becomes an effective tool for supporting sustainablelandscape management and enhancing the overall quality of the park.



According to the design proposal, the smart management platform is connected with mobile applications and intelligent service facilities to provide visitors with convenient access to park information and public services. Through the application platform, users can obtain navigation information, activity guidance, and environmental information while participatinginlow-carboninteractiveprogrammesestablishedwithinthe park. At the same time, intelligent lighting, energy-saving facilities, and digital management systems improve operational efficiency and reduce unnecessaryenergyconsumption.Thesetechnologiessupportthe long-term operation of the park while reflecting the project's objective of combining intelligent management with low-carbon development.



TheSmartParkSystemalsostrengthenscommunicationbetweenthe park and its users. By encouraging public participation through digital services and low-carbon interaction mechanisms, the project transforms visitors from passive users into active participants in environmental protection.Thispeople-orientedmanagementapproachnotonlyimproves the quality of public services but also enhances environmental awareness within the community. As a result, intelligent technology is integratedinto the landscape in a practical and accessible manner, supporting the overall vision of Jiashan Park as a sustainable urban park under thecarbon neutrality strategy.



Summary

The special topic designs presented in this chapter demonstrate how the overall concept ofLow-carbon Landscape is translated into specific landscape interventions within Jiashan Park. Rather than treating public art, recreational facilities, waterfront spaces, children's activity areas, and intelligent management systems as separate components, the project integrates them into a coherent low-carbon landscape framework. Each design element responds to the existing environmental conditions of the site while contributing to ecological improvement, public participation, and sustainable operation.

By combining ecological restoration, intelligent technology, and people-oriented design, the proposal enhances both the environmental performance and the recreational quality of Jiashan Park. These special topic designs not only enrich the spatial experience of the park but also provide practical examples of how carbon-neutral concepts can be incorporatedinto the renewal of urbanpublic spaces. Together, they form the core landscape features of the project and reflect the overall objective of creating a modern, intelligent, and environmentally sustainable urban park.



CHAPTERVConclusion

Conclusion

This studyexplores thelow-carbon landscape design of Jiashan Park in Mingguang City under the carbon neutrality strategy. Based on an analysis of the site's existing conditions, surrounding environment, and development potential, the project proposes a landscape renewal scheme that integrates ecological restoration, intelligent technologies, and sustainable design principles. Throughout the design process, emphasis is placed on preserving the site's existing ecological resources while improving spatial organisation, environmental quality, and public accessibility. Rather than pursuing large-scale reconstruction, theproposal adopts a strategy of optimising the original landscape framework, allowing Jiashan Park to better respond to the environmental and social needs of contemporary urban development.

Theproposeddesignfollowstheconceptof"SmartGreenFuture",

combining low-carbon landscape strategies with intelligent park management. Ecological planting, rainwater utilisation, sustainable materials, smart facilities, and interactive public spaces are incorporated into the overall planning to improve both environmental performance and visitor experience. Special topic designs, including low-carbon public art, the low-carbon runway, children's activity spaces, and the intelligent waterfront, further strengthen the relationship between ecological protection and public participation. These interventions demonstrate how sustainable landscape concepts can be translated into practical design solutions while maintaining the original ecological characteristics of the site.

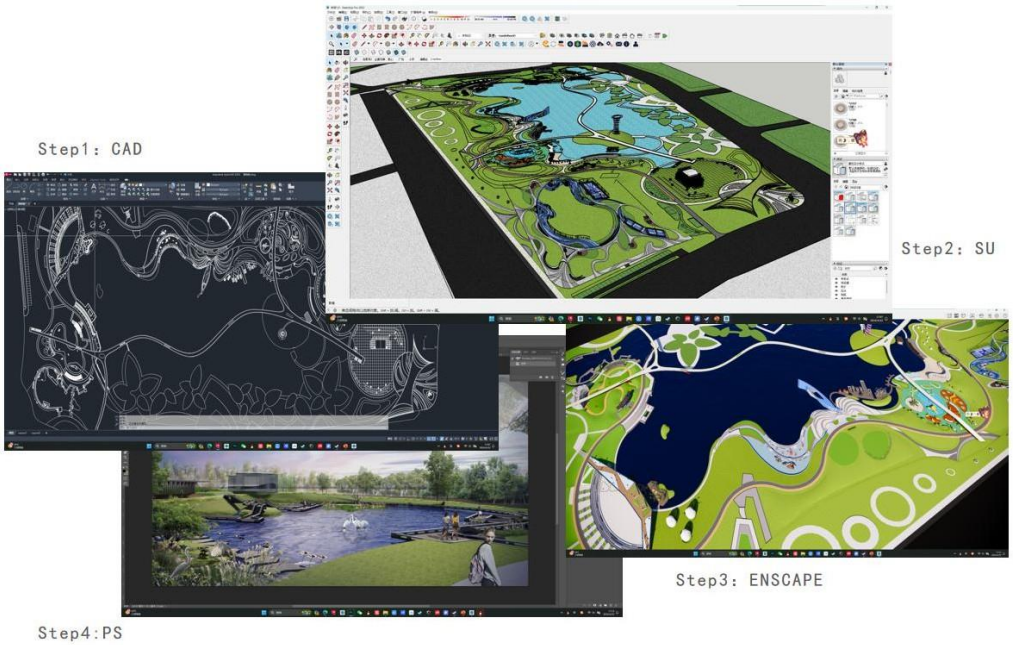
Overall, the design not only improves the environmental quality and recreational value of Jiashan Park but also provides a practical exampleoflow-carbon urbanpark renewal formedium-sized cities. By integrating ecological restoration, intelligent technology, and sustainable planning into a unified landscape framework, the project contributes to the development of environmentally responsible public spaces under the carbon neutrality strategy. It is expected that the design concepts and methods presented in this study can provide useful reference for future landscape projects with similar environmental conditions and development objectives.

LimitationsandFutureProspects

Althoughtheproposeddesignestablishesacomprehensiveframeworkfor the sustainable renewal of Jiashan Park, several limitations remain. Dueto time constraints and the scope of the graduation project, the study mainly focuses on landscape planning and conceptual design rather than detailed engineering implementation. Some intelligent management systems and low-carbon technologies presented in the proposal require further technical verification and operational evaluation before practical application. In addition, the long-term ecological performance of the proposed planting strategies and rainwater management system should be assessed through continuous monitoring after implementation.

Future research may further explore the application of digital technologies, artificial intelligence, and smart environmental monitoring in urban park management. More detailed studies on carbon emission assessment, landscape life-cycle analysis, and ecological performance evaluation could also strengthen the scientific basis of low-carbon landscape design. As urban development continues to promote carbon neutrality and sustainable construction, landscape architecture will playan increasingly important role in improving ecological resilience and publicwell-being.The experiencegainedfrom the designofJiashanPark

maythereforeprovideusefulguidanceforthefuturerenewalofurban parks and the development of sustainable public landscapes.



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APPENDIXA.Visualmaterialforthetext

Design Case Analysis







The design team has always adhered to the core design approach of minimally invasive intervention, making use of the original vertical, human-land and vegetation relationships to create landscapes in accordance with local conditions, emphasizing the concept of light design and heavy origin. They adhere to the principles of ecology, low-cost maintenance and sustainability, guided by the ideology of "scenery in all four seasons and everywhere".

Taking full advantage of its superior geographical location and green base, the design team transformed the once abandoned land into a vibrant park. They transform useless areas into useful ones, update old scenes into new looks, and bring silent environments to life.

Location: Hongshan, Anshun
Designer: L&A Group
Time: January 2020

13

Design Case Analysis

- The oval-shaped area in the first phase gradually extends into a wide basic walkway, providing an ideal place for nearby residents to take a walk, chat and take photos.
- The wetland walkway winds along, offering not only a view of the riverbank but also attracting visitors to stroll along the river, allowing them to get closer to nature.
- The small island reserve offers a new resting place for migratory birds and residents of Long Island City, giving them the opportunity to have a close encounter with nature.。





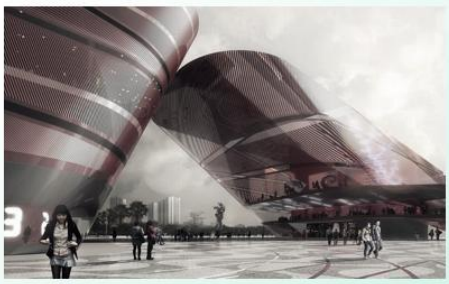


Project Information: Hunter's Point Nanbin Park Phase II
Location: The United States
Design ArupSWA/BALSLEYWEISS/MANFREDI
Time 2020.04

13

Case summary

- All will be in contact. The focus of the plan is on the contact and development with the surrounding areas and houses.
- Meet the needs of life and promote economic prosperity.
- Sustainable development and the expansion of innovative concepts.



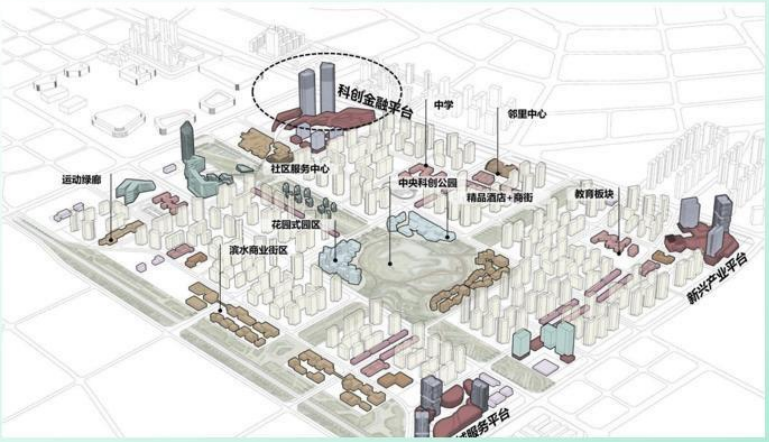


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Location analysis

- Chuzhou lies in eastern Anhui Province. It is a core city of both the Nanjing Metropolitan Area and Hefei Economic Circle, and an important hub in the Yangtze River Delta integration zone.
- Basically, it forms three major functional zones: science and education new town, industrial landscape area and natural landscape area.
- Basically, it forms three major functional zones: science and education new town, industrial landscape area and natural landscape area.

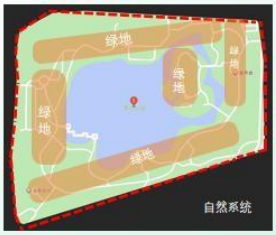


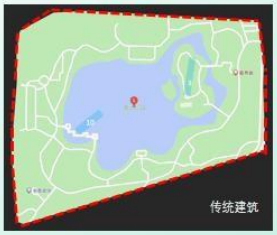


21

Site perception

- Site area: 4hm²
- The site lies in the core eastern area of Mingguang City, adjoining the urban main road on the west. To its north is Mingguang Municipal People's Government, and residential communities stand on the east.建筑肌理
- Open space
- Emerging industry base







22

Building resources

- Two bridges, one pavilion, one corridor, one lake, two houses.
- Emerging science and education buildings.
- It has the most technologically advanced architectural complex in the local area.









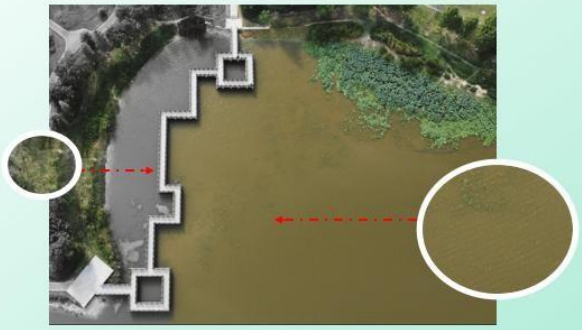
23

Present situation of the base

- The planting areas within the park are unevenly distributed and unreasonably arranged. Plants along roads vary greatly in density and size, resulting in large areas of exposed soil, poor visual effect and uncomfortable experience.
- The plant layout lacks reasonable hierarchical and color collocation, with monotonous ground cover and arbor species, leading to insufficient landscape appeal. It is suggested to enrich plant layers and colors to enhance visual diversity. Meanwhile, landscape elements can be arranged around the water body to enrich vitality and ornamental value.



▲The plant configuration is monotonous.

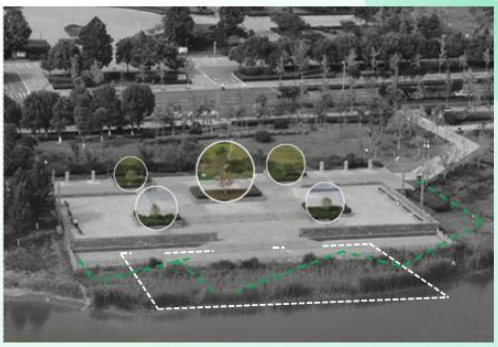


▲The vegetation along the water and the water body configuration are scarce

25

Present situation of the base





- The safety facilities on site fail to blend into the environment and appear abrupt, requiring better integration with the landscape.
- The waterside lacks fence protection, posing potential safety hazards. Meanwhile, the view is partially blocked by plants with insufficient openness, which needs redesigning.
- Plant landscaping fails to connect functional spaces effectively, leaving the site empty and lacking visual focal points.
- Basic supporting facilities are placed randomly without considering tourists' experience and boundary effects. Seating areas lack tree shading, resulting in wasted space. All these problems shall be properly addressed in the design.

26

VISION

With ecological sustainability as the core, Jiashan Park integrates cutting-edge technologies to achieve low-carbon goals. Adopting the "Smart Green" concept, it highlights the harmonious integration of natural ecosystems and intelligent technologies. Closely aligned with the 2030 Sustainable Development Goals, the park strives to build an eco-friendly, technology-enabled and vibrant public space, pioneering the future development of urban parks.

The park adopts sustainable design to build an eco-friendly, cost-effective and socially inclusive space.
It focuses on ecological protection and restoration, native plant application and resource efficiency, using eco-friendly materials while limiting motor vehicles to cut pollution and noise.



▲Principles of Smart City



▲Sustainable design

Design strategy

By 2030, Jiashan Park will emerge as the green heart of Mingguang City, showcasing a futuristic landscape blending natural beauty and modern technology. More than a recreational venue for citizens, it will serve as a demonstration and educational base for sustainable living.

Design element:

Intelligent Ecosystem: IoT monitors vegetation, water quality and energy consumption; a mobile APP provides park ecological and cultural information.

Sustainable Energy: Solar and wind facilities power park facilities while serving as landscape landmarks.

Ecological Water System: Rainwater recycling and natural wetland purification supply irrigation and aquatic maintenance.

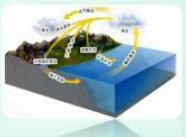
Green Mobility: Cycling and pedestrian routes with e-bike rental encourage low-carbon travel.

Eco-Education Space: Indoor and outdoor areas hold regular environmental and sustainability workshops.

Multifunctional Open Space: Flexible venues support markets, exhibitions, events and outdoor performances.













Design strategy









Design objective

Ecological Conservation: Restore and protect local ecosystems to boost plant biodiversity.

Community Engagement: Encourage public participation to enhance space utility.

Education & Awareness: Promote environmental awareness through practical interactive programs.

Sustainable Development: Demonstrate green technologies and lifestyles as an urban model.

Jiashan Park will integrate ecological conservation, recreation, education and technological innovation, leading the city's future green developmen

30

Design element extraction



Garden maze



Sailboat



Eggshell structure











Ribbon curve











Terraced fields



Contour texture



Contour texture



Green concept

33

Design element extraction



Traditional stage



Smart stage/interact



Afterfront amusement/lack of water experience



Road pool/terrace walking



Fitness zone/lack



Full use of time



Single tree pool/Isolate



Road tree pool/terrace seating



Highway interchange /lack



Highway interchange /guide



Single tree pool/Isolate

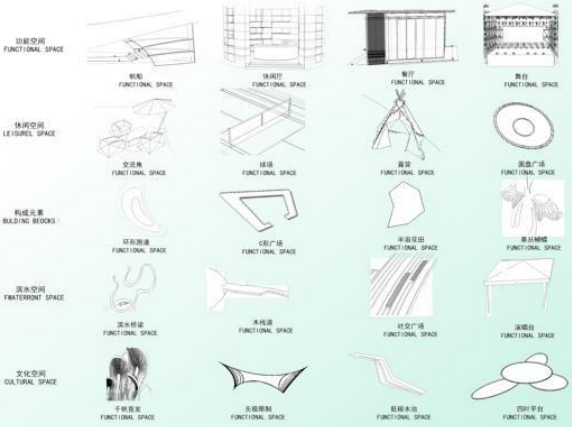


Smart building/shelter/leisure area

34

Design element extraction

SPACE TYPE



Spatial Design Strategies::

Guided by the carbon-neutral concept of Smart Green Future, the low-carbon design of Jiashan Park focuses on natural integration and ecological conservation. Addressing existing urban issues and embracing future possibilities, the design takes into account time, space and human activities. By leveraging terrain, vegetation and water landscapes, it creates a park harmoniously integrated with the surroundings. Renewable energy and green building materials are adopted to cut carbon emissions and achieve genuine carbon neutrality.

人群分析



年轻人活动类型多为动态，并带有一定的跳跃性。

老年人活动多静态，相对更加有私密需求。

儿童活动类型较多，灵活性最高。

不同年龄段人群公共活动不一，具有明显的多样性 丰富性。因此，再设计中应综合考虑人们活动的形式的多样性，且考虑其所需要的空间。

35

plan



design procedures

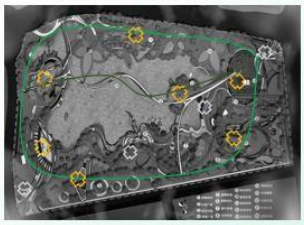
Reduce the use of high-carbon and heavily processed materials such as plastics, steel and concrete. Wetlands and marshes are retained as core green spaces to cut carbon emissions and improve ecological benefits. Recycled materials including reclaimed steel and aluminum are adopted to lower resource consumption and carbon output. Native and locally adaptive plants are selected for easy maintenance, oxygen supply and landscape beautification. Natural renewable materials like wood and bamboo are prioritized for their low environmental impact.

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Landscape System Analysis

This plan adopts the "one belt and multiple points" approach to construct the environmental functional structure.

- The waterfront landscape belt is a distinctive feature along the water area of Jiashan Park. Starting from natural water runoff, it connects both banks via landscape bridges to form an integrated scenic corridor, laying a solid foundation for future development. This belt also creates pleasant scenery around the site, offering leisure areas and waterfront experience spaces for residents and visitors.
- The design adopts a multi-point layout to combine various leisure, interactive and experiential spaces, forming a diversified waterfront landscape belt. This layout enriches landscape functions, caters to the needs of different groups, and enhances the overall appeal and vitality of the area.



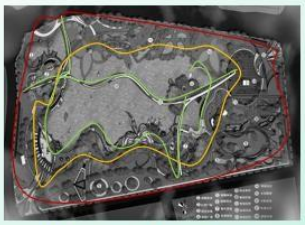
Analysis of Landscape Axis

First-level landscape axis

Secondary landscape axis

First-level landscape node

Secondary landscape node

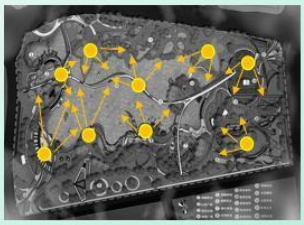


Internal traffic analysis

External main channel

Internal main passage

secondary road



Analysis of landscape Sightlines

landscape location

Scenic View

39

Functions and Facilities





















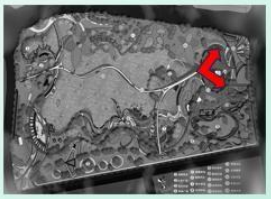


40

Effect drawing display: Smart stage area at the entrance square

This area features a barrier-free viewing platform. Around 60 square meters of solar photovoltaic panels in the corridor generate about 9,070 kWh of electricity annually, cutting carbon emissions by approximately 5,300 kg. Built with eco-friendly materials, the platform is equipped with recreational facilities and popular science displays. It offers fine views for visitors while enriching their low-carbon experience.







Green Square

△A multi-level and rich plant configuration can reduce carbon emissions

44

Rendering display: Intelligent waterfront coastline landscape node

Jiashan Park focuses on immersive waterfront landscape construction. Waterfront bridges, stepping stones and shoreline cruise services deliver an intimate water-contact experience for visitors.An AR system is integrated along the circular runway, with AI facial recognition robots serving as start and finish check-in points. After registration, visitors can complete check-in via facial recognition before and after exercise.







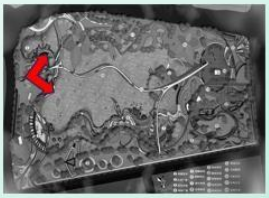


coastline

Rendering display: Landscape node of the riverside bridge abutment

The southern area of Jiashan Park features open water surfaces. Combined with Huizhou architectural style, two characteristic branch water-crossing bridges and a rainwater recycling system are built between the Cultural Square and the southern zone. Modern design blends with historical heritage, creating a unique spatial charm and artistic tension.





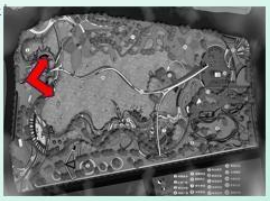


Spiegel Square

△Wetlands have an excellent carbon sequestration capacity

Cross-sectional view: Landscape node of the waterfront abutment

The southern area of Jiashan Park boasts expansive water landscapes. Integrated with Huizhou architectural style, two distinctive branch water bridges and a rainwater recycling system are constructed between the Cultural Square and t southern zone.







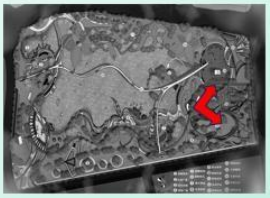
Spiegel Square

49

Rendering display: Landscape nodes of the leisure activity space

Designed as a lively children's playground with modern and low-carbon techniques, this area offers entertainment for kids and accompanying spaces for guardians. Supported by a mobile application, visitors can enjoy smart park services including sightseeing, management and information inquiry. Users can exchange low-carbon credits for access to intelligent interactive facilities, effectively boosting the pleasure of park visits.







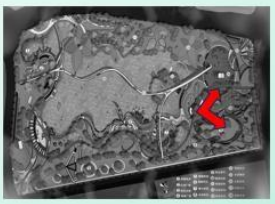
Genius Space

50

Rendering display: Landscape nodes of the leisure activity space

Residents, tourists, students and children can enjoy flying kites, chatting, sketching and sightseeing here in their spare time. Adhering to green design concepts, this space meets people's physical and mental entertainment needs.







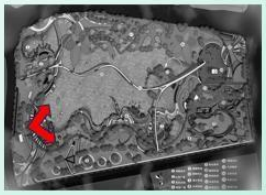
低碳草场
Low carbon grassland

52

Effect drawing display: Smart stage area at the entrance square

The west entrance adopts low-carbon and eco-design concepts and energy-saving green composite materials to create a scenic green area. It provides tourists with three distinctive recreational experiences, enriching their leisure time and enhancing their sightseeing enjoyment.







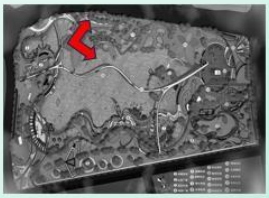
West square

54

Rendering display: Landscape nodes of the leisure activity space

The expansive water area and waterfront gardens embody low-carbon eco-design ideas. Aquatic plants and landscape stones are arranged alongside wooden bridges with milky white decks that represent low-carbon concepts, forming a natural space where humans, flora and fauna coexist harmoniously.





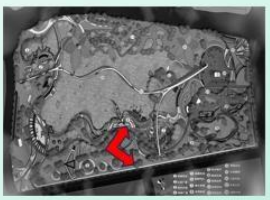


Genius Space

Rendering display: Landscape nodes of the leisure activity space

The low-carbon birdhouse creates a comfortable space for visitors while minimizing environmental impacts. Constructed from certified renewable materials such as bamboo and reclaimed timber, the building makes full use of natural light and ventilation to cut energy consumption. Solar panels on the roof supply power, and an on-site rainwater collection system helps preserve the natural landscape and avoid ecological damage. These practices improve visitor experience and contribute to biodiversity conservation.





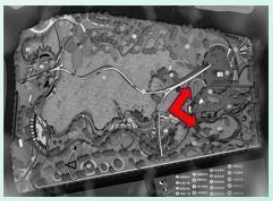


Low carbon space

Rendering display: Landscape nodes of the intelligent fitness space

This low-carbon running track supports physical exercise while delivering an eco-friendly and smart sports experience. Built with renewable materials and energy-saving technologies for long-term safety, it is equipped with an intelligent shopping system. Visitors can purchase eco-friendly goods via mobile apps, and runners can earn carbon points to redeem environmental gifts or coupons, encouraging greater engagement in low-carbon activities.





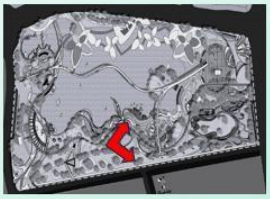


低碳跑道
Low-carbon runway

Rendering display: Landscape nodes of the leisure activity space

This area serves as a cozy resting space for visitors to unwind and embrace nature. It features waterfront paths, sunlit lawns and camping zones, where people can stroll, jog, take part in leisure activities, or relax and read in tents. Following eco-friendly design principles, the whole area adopts green materials and energy-saving facilities, encouraging visitors to protect nature and build a sustainable future.

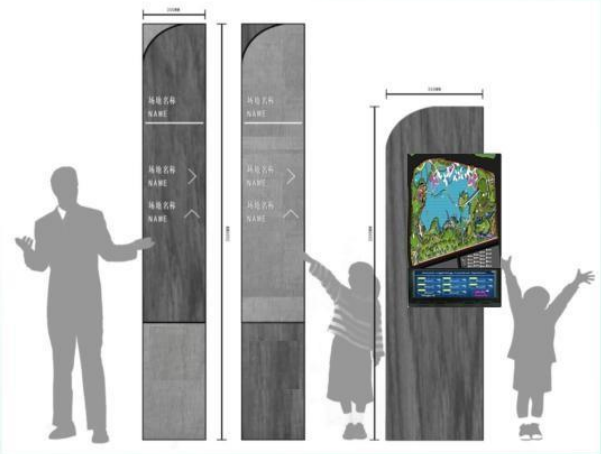






Free Space

Sign design interactive wayfinding system



The smart touchscreen guidance system is an intelligent information service for urban parks. Equipped with touch technology and real-time data updates, it delivers reliable guidance and information to optimize visitors' experience.

Key features

- Interactive: User-friendly interface for map browsing, inquiry and trip planning.
- Real-time update: Linked to the park management system, it timely refreshes scenic introductions, event schedules and weather information.
- Multilingual: Supports multiple languages to serve international visitors.
- Positioning: Adopts GPS to locate users and offer navigation.
- Rich information: Covers scenic details, opening hours, transport, facility locations and emergency services.
- Customizable: Managers can adjust the interface and content to fit park characteristics.

materials purchase strategy













