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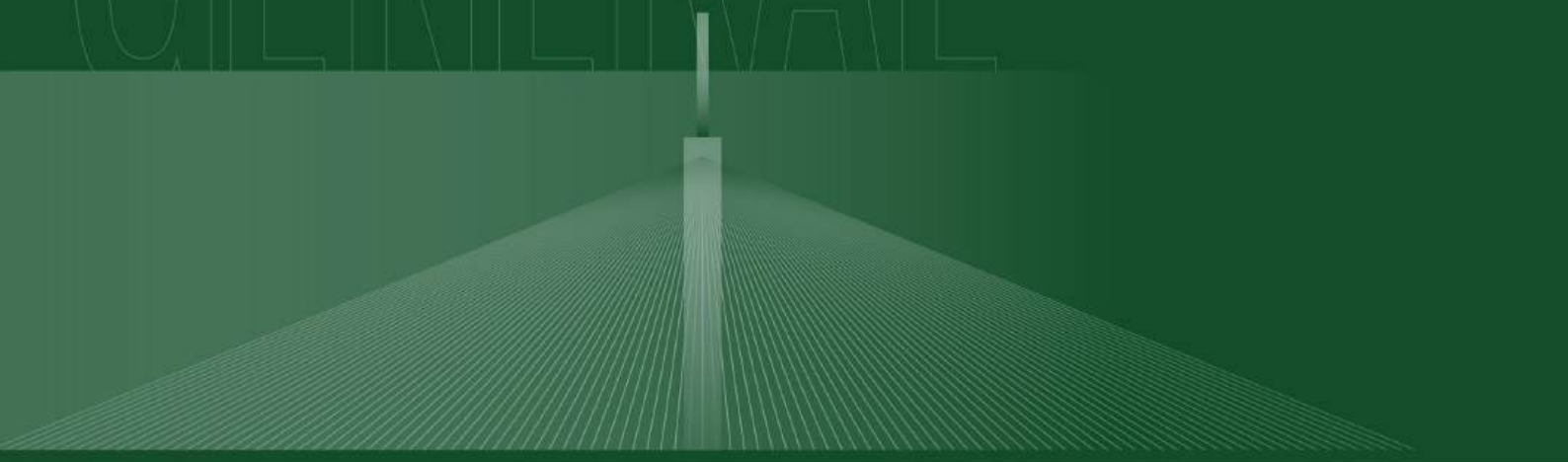

EXPLORATION AND PRACTICE OF URBAN REGENERATION IN WUHAN

— GENERAL REPORT

REPORT

2024

UN-HABITAT

EXPLORATION AND PRACTICE OF URBAN REGENERATION IN WUHAN - GENERAL REPORT

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ACKNOWLEDGEMENTS

Principal Authors: Wuhan Planning and Design Institute (Wuhan Transportation Development Strategy Research Institute)
Contributor: UN-Habitat China Office
Source of data and images: In addition to the sources contained in the references, all information and pictures come from Wuhan Planning and Research Institute (Wuhan Transportation Development Strategy Research Institute) responsible for the project

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PREFACE

URBAN REGENERATION is not only an inevitable redevelopment process a city will experience when it grows to a certain stage, but also a comprehensive planning strategy characterized by the collaboration of multiple stakeholders to revitalize, transform, and reutilize unused or underutilized land, spaces, and assets within the city. It aims to achieve long-term social, economic and ecological benefits, and uncover potential and opportunities to drive social prosperity and improve the quality of life of citizens. Since the large-scale demolition and reconstruction following the World War II, urban regeneration in the international context has evolved from an initial focus on upgrading of physical forms to today' s more multidimensional, sustainable, culture- and people-centered development model. In China, urban regeneration has also transitioned from the large-scale "incremental development" and rapid urbanization in the 1990s and 2000s to a new phase where "both stock development and incremental structural adjustment are emphasized". Since the 2010s, the government' s policies have increasingly been aligned with international standards to fully enhance attention to urban resilience, ecological health and livability, and build a high-quality urban regeneration model with Chinese characteristics.

Wuhan, one of China' s eight newly emerging megacities with a population of more than ten million, is the only megacity in the central China region. As the core city of the Yangtze River Economic Belt, a major industrial city, the largest inland transportation hub in China by land, water and air, and an international wetland city, it plays a leading role in the high-quality development of Chinese cities, especially for those in central China. In 2022, the Department of Housing and Urban-Rural Development of Hubei Province issued the *Guidelines for Urban Regeneration in Hubei Province (Trial)*. In 2023, Wuhan Municipal Government released the *Urban Regeneration Action Plan of Wuhan*, striving to carry out high-quality urban regeneration as quickly as possible.

To keep up with the state-of-the-art international concepts and take the lead in domestic urban regeneration, the local think tank Wuhan Planning & Design Institute (Wuhan Transportation Development Strategy Institute) actively communicated and cooperated with the United Nations Human Settlements Programme (UN-Habitat) to strengthen the implementation of the Sustainable Development Goal 11, particularly Target 11.3, as well as the practice and application of the *New Urban Agenda* in China, by a series of joint research. The research took account of Wuhan' s own endowments, benchmarked on international cases, summed up concepts and implementation paths suitable for Wuhan' s urban regeneration, and integrated representative local cases, so as to provide reference and guidance for future urban regeneration of Wuhan.

This research report on the exploration of urban regeneration practice of Wuhan is prepared for better sharing and exchange of knowledge and experiences in the field of urban regeneration. By a comprehensive review of international cases, the report highlights typical practice of Wuhan, analyzes regeneration strategies and approaches at different stages of urban development from multiple perspectives, and compiles the best practices of those cases. This report is also expected to inspire brainstorming of city administrators and decision-makers, increase the dissemination of excellent urban regeneration concepts and methods, and attract the public' s attention. Let us unite to jointly create a better living environment and build a brighter future for our cities.

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OVERVIEW

OVERVIEW OF URBAN REGENERATION

The Evolution of Urban Regeneration

Demolition and Reconstruction (1950s)
Integrated Regeneration and Reconstruction (1960s-1970s)
Small-scale Market-oriented Regeneration (1980s-1990s)
People-centered Sustainable Urban Development (1990s-2000s)
Integrated Urban Revitalization (2010s-2020s)

Urban regeneration originated in post-World War II Europe, aiming to address economic and political crises accompanying urban development, absorb surplus social capital and alleviate social conflicts to achieve the sustainable development of people and the society. The foci of urban regeneration have been evolving with the times, and directly manifest different values and changing needs of people for cities in different periods. After the World War II, the global urban regeneration can be divided into the following five stages:

1.1.1 Demolition and Reconstruction

1950s

After the World War II, post-war reconstruction was the primary task of urban regeneration. European countries, especially those severely ruined during the war, led this process. The goal was to restore infrastructure, housing and public services, with a stress on modernist architectural principles that gave priority to functionality and order. State interventions also emerged in this period, with the government playing a vital role in the planning and execution of urban reconstruction projects.

1.1.2 Integrated Regeneration and Reconstruction

1960s——1970s

This period witnessed slum clearance programs implemented actively in North America and parts of Europe, with an aim to eliminate areas considered as “urban blight” and replace them with modern housing, commercial centers and infrastructure. However, these efforts usually led to the relocation of large numbers of low-income communities, drawing criticism for neglecting social structures and historical values. The emphasis during this stage was on modernization and economic development, sometimes at the expense of community cohesiveness.

1.1.3 Small-scale Market-oriented Regeneration

1980s——1990s

Urban regeneration shifted its focus towards revitalizing city centers in Western countries, with the phenomenon of gentrification emerging accordingly. However, attracting wealthier residents through urban redevelopment often resulted in move-out of low-income population, raising concerns about social equality. At the same time, there was a growing awareness of the importance of preserving historical and cultural heritage, propelling more refined approaches to urban regeneration to find a balance between development and preservation.

1.1.4 People-centered Sustainable Urban Development

1990s——2000s

With the increasing prominence of environmental concerns, urban regeneration began to include the principle of sustainable development. The primary focus shifted towards people-centered urban development and sustainability, to solve problems of cities by approaches encompassing economic, social and environmental dimensions. Emphasis was placed on constructing more livable, green cities and reducing carbon footprints. Concepts such as smart growth, hybrid functional development and sustainable transportation gained popularity. Moreover, community engagement in the planning became increasingly important, with consideration to residents' viewpoints during decision-making.

1.1.5 Integrated Urban Revitalization

2010s——2020s

In the most recent stage, urban regeneration has evolved into integrated urban revitalization, with a focus on addressing social, economic and environmental issues simultaneously. The methods of urban regeneration have become more inclusive, with an aim to improve the quality of life of all residents while ensuring economic vitality and environmental sustainability. Projects during this period usually emphasize resilience against disasters, particularly the ability to adapt to climate changes, for the purpose of constructing adaptable and equitable cities.

Figure 1: Banov's House, Wuhan

1.2

The Significance of Urban Regeneration

Urban Regeneration as a Tool for Promoting Sustainable Economic Development
Urban Regeneration as a Tool for Enhancing Urban Inclusiveness and Cohesion
Urban Regeneration as a Tool for Implementing Environmental Protection and Low-carbon Development
Urban Regeneration as a Tool for Strengthening Cultural Preservation and Heritage Utilization

Urban regeneration is a comprehensive planning strategy for solving problems confronted in urban development. The solution is to achieve long-term development goals of urban areas in economic growth, social governance, inclusive progress, ecological restoration and cultural preservation by multi-stakeholder collaboration. Encompassing economic, social, livelihood, ecological and cultural dimensions, urban regeneration is a crucial means for realizing sustainable urban development.

1.2.1 Urban Regeneration as a Tool for Promoting Sustainable Economic Development

Urban regeneration is a tool playing multi-tiered roles in pushing the sustainable economic recovery of cities. Its core objectives are to implement planned functional reconstruction and environmental optimization in dilapidated urban areas, improve infrastructure and public services, enhance general attractiveness of cities, and create a good environment for business development and innovation. In addition to raising the quality of life of urban residents, urban regeneration targets at attracting new investors and talents, and advancing industrial upgrading and optimization of economic structure, thereby enhancing land-use efficiency, impelling the development of innovative industries, increasing employment and consumption, boosting economic competitiveness of cities, and driving sustainable urban economic development.

1.2.2 Urban Regeneration as a Tool for Enhancing Urban Inclusiveness and Cohesion

Urban regeneration encourages public participation in decision-making through the establishment of multi-stakeholder platforms, and promotes effective integration of the government at all levels, different departments, stakeholders and local communities. Hence, the regenerated city can better meet pragmatic needs of diverse groups and showcase social inclusiveness. By preserving and utilizing the traditional culture, urban regeneration allows residents to perceive the city's profound heritage and unique charm, and strengthen their sense of identity and belonging.

1.2.3 Urban Regeneration as a Tool for Implementing Environmental Protection and Low-carbon Development

Urban regeneration can effectively restore damaged ecosystems, reduce carbon emissions, improve the environment, enhance urban ecological resilience, and raise the adaptivity to climate changes. During urban regeneration, the measures such as promotion of green building technologies, energy efficiency improvements, traffic system optimization and advocate of renewable energy can effectively reduce carbon emissions, significantly minimize energy consumption and carbon footprints in cities, and achieve the goal of green and low-carbon urban development.

1.2.4 Urban Regeneration as a Tool for Strengthening Cultural Preservation and Heritage Utilization

Urban regeneration projects are important for restoring and preserving historical buildings and cultural sites, enabling the continuation of the city's collective memory. These projects can not only create opportunities for residents and visitors to know the city's historical and cultural roots, but also revitalize cultural heritages through appropriate utilization. By transforming cultural heritages into tourism resources, urban regeneration can attract massive tourists, promote the development of cultural tourism, generate direct economic benefits, and stimulate the growth of related service sectors such as hospitality, dining and retail.

02

Global Urban Regeneration Benchmarking Study

- The “Four Key Development Concepts” of Urban Regeneration
- “Six Categories of Implementation” of Urban Regeneration
- Urban Regeneration Cases

STUDY

Urban regeneration carries certain regional traits and cultural characteristics, must respond to various demands and challenges. This report, highlighting the traits of Wuhan as a mega-city in central China, an industrial city, a historical and cultural city and an international wetland city, has selected representative cases from different regions and types of urban regeneration. After extensive studies of urban regeneration literatures, the research selects different types of regeneration projects both at home and abroad, explores key areas of focus, novel concepts, main strategies and notable outcomes, and summarizes the experiences in shaping the "Four Key Development Concepts" and the "Six Categories of Urban Regeneration".

GLOBAL URBAN REGENERATION BENCHMARKING STUDY

2.1

The “Four Key Development Concepts” of Urban Regeneration

Emphasizing Inclusive Development to Create a Fair and Sharing Regeneration Model
Emphasizing Diversified Industries as an Engine to Drive Sustainable Economic Prosperity and Development
Focusing on Ecological Protection and Zero-carbon Development to Achieve Harmonious Co-existence Between Humans and Nature
Focusing on Cultural Preservation, Inheritance and Promotion to Foster Endogenous Motivation for High-quality Regeneration

2.1.1 Emphasizing Inclusive Development to Create a Fair and Sharing Regeneration Model

"Inclusiveness" is a hallmark of urban civilization, which means that everyone in the city—regardless of wealth, gender, age, race, cultural background, religious beliefs or health status—can voluntarily participate in productive activities. Urban regeneration, as a critical path to achieving inclusive urban development, should reflect inclusiveness in its objectives, decision-making processes and benefits-sharing.

- Leverage long-term urban regeneration projects to enhance social cohesion and inclusiveness.
- Focus on human-centered design and diverse needs and improve residents' quality of life and well-being by optimizing public spaces and community facilities.
- Safeguard the public interests of vulnerable groups.
- Improve the living environment, public spaces and traffic conditions at the community level and update management policies to create an all-age-friendly urban environment.
- Encourage public participation in urban regeneration, promote resource sharing and integrated use within communities, and support joint construction and shared efforts in community regeneration.

2.1.2 Emphasizing Diversified Industries as an Engine to Drive Sustainable Economic Prosperity and Development

"Diversity" is the source of urban prosperity. Urban regeneration plays an irreplaceable role in industrial upgrading and structural optimization, integrating industrial spaces with residential, commercial and cultural areas of the city to create a unified development model. Relevant practices include guiding the industrial structure towards high value-added and high-tech sectors, providing spaces for emerging industries such as high-tech, creative industries and green energy, and promoting the optimization and upgrading of industrial structure.

- Use regional urban regeneration projects as leverage to activate high-value land resources, and offer optimal development space for innovative and creative industries.
- Upgrade industrial spaces, increase public areas, such as plazas, green spaces and leisure spots, and form socially open scientific and technological innovation spaces.
- Provide comprehensive environment, facilities and institutional support for the development of the informal economy through community-level urban regeneration.
- In the process of diversified industrial regeneration, enhance public services and economic integration strategies to ensure sustainable development.

Figure 2: Banks of Han River

2.1.3 Focusing on Ecological Protection and Zero-carbon Development to Achieve Harmonious Co-existence Between Humans and Nature

"Co-existence" is a cornerstone of urban development, while protecting and building the urban ecological environment have always been key components of urban regeneration. Urban development always emphasizes the coexistence of people and the environment, with a focus on restoring natural traits, promoting low carbon and emissions reduction, enhancing urban resilience and various facets for the construction of urban public spaces.

- Restore regional natural ecological foundations through ecological rehabilitation, and strengthen urban resilience.

- Take the opportunity of urban regeneration projects to advance resource-cycling residential houses, implement new construction technologies for low-carbon and zero-carbon buildings, and promote green and low-carbon transformations in built-up areas.

- Beautify the urban natural environment and improve the construction quality of urban public spaces.

- Emphasize the flexible planning in urban regeneration to address extreme weather caused by climate change, reduce disaster risks, and ensure urban safety and stability.

2.1.4 Focusing on Cultural Preservation, Inheritance and Promotion to Foster Endogenous Motivation for High-quality Regeneration

"Inheritance" is the call of a city's spirit. In the context of globalization and post-industrialization, cultural shifts in urban development and the trend toward urban cultural competition become increasingly evident. As the goals of urban regeneration evolve from economic growth to diversified upgrading, the endogenous role of culture in urban development has gradually come to the forefront. Culture can not only enhance the quality and substance of a city and reinforce its character, but also foster social consensus, vitality and creativity. Moreover, culture can stimulate economic production and consumption, and facilitate the transformation and upgrading of the urban economy.

- Implement culture-led regional urban regeneration initiatives and systematically enhance a city's overall competitiveness and image.

- Emphasize the preservation, restoration and adaptive reuse of architectural heritage and integration with the surrounding natural landscape, reshape historical context and highlight cultural appeal through urban regeneration projects.

- Encourage "micro-regeneration, micro-renovation" to protect historical resources, balance preservation with development, and create culturally innovative and attractive spaces.

SOCIAL BENEFITS

Cohesion and inclusion

Leverage long-term urban regeneration projects to enhance social cohesion and inclusiveness. Focus on human-centered design and diverse needs and improve residents' quality of life and well-being by optimizing public spaces and community facilities. Safeguard the public interests of vulnerable groups.

Continuous community engagement

Encourage public participation in urban regeneration, promote resource sharing and integrated use within communities, and support joint construction and shared efforts in community regeneration.

Smart city

Integrate advanced information technologies with urban regeneration to accelerate the development of smart and digital cities, and enhance the efficiency and level of urban management.

All age friendly

Improve the living environment, public spaces and traffic conditions at the community level and update management policies to create an all-age-friendly urban environment.

ECONOMIC

Sustainable prosperity

Use regional urban regeneration projects as leverage to activate high-value land resources, and offer optimal development space for innovative and creative industries.

Working with different types of partners

Encourage diverse stakeholders to participate in regeneration implementation, strengthen funding and policy support, and ensure the feasibility of regeneration projects.

ENVIRONMENT

Prepare and mitigating effects of climate changes

Emphasize the flexible planning in urban regeneration to address extreme weather caused by climate change, reduce disaster risks, and ensure urban safety and stability.

Reinstating nature

Restore regional natural ecological foundations through ecological rehabilitation.

Retrofitting outdoor spaces (green, open and public)

Beautify the urban natural environment and improve the construction quality of urban public spaces.

Decarbonization

Take the opportunity of urban regeneration projects to advance resource-cycling residential houses and implement new construction technologies for low-carbon and zero-carbon buildings, thus promoting green and low-carbon transformations in built areas.

CULTURE

Cultural heritage

Place a high value on the protection of historical and cultural heritage, highlight local characteristics, and allow the city to preserve its memories and evoke nostalgia.

Micro-regeneration, micro-renovation

Encourage “micro-regeneration, micro-renovation” to protect historical resources, balance preservation with development, and create culturally innovative and attractive spaces.

2.2

“Six Categories of Implementation” of Urban Regeneration

Residential Community Livelihood Improvements: Renovation of Dilapidated Communities and Complete Neighborhoods
Economic and Industrial Revitalization: Transformation of Old Commercial and Industrial Areas
Ecological and Environmental Protection: Ecological Restoration, Brownfield Remediation, Environmental Protection, and Resource Utilization
Public Space Enhancement: Waterfront Areas, Squares & Parks, and Public Service Spaces
Infrastructure Enhancement: Transportation and Municipal Infrastructure
Historical and Cultural Preservation: Historical Streets, Buildings, and Industrial Heritage

This section focuses on the key tasks and types of urban regeneration of Wuhan, and sums up international experiences in six domains: residential community, industry, environment, public space, infrastructure, and history and culture.

2.2.1 Residential Community Livelihood Improvements: Renovation of Dilapidated Communities and Complete Neighborhoods

Targeting at projects such as renovations of dilapidated residential communities and shabby housing, this category aims to attract active community engagement in regeneration through spatial design, project organization and implementation. The goals are to provide better housing and social services and improve the living environment. Key characteristics of this regeneration approach typically include:

PEOPLE-CENTERED

Emphasize a people-centered approach that gives priority to residents' needs and quality of life, focus on involving local residents and gathering feedback, and allow residents to participate in decision-making processes.

CULTURAL HERITAGE

Respect cultural inheritance, and enhance residents' cultural identity and sense of belonging by preserving and promoting cultural traditions of regenerated communities.

COMPREHENSIVENESS

Highlight comprehensiveness by addressing multiple aspects of community well-being, including but not limited to improvements in housing conditions, infrastructure amelioration, optimization of ecological environment, and enhancement of community services.

SOCIAL EQUITY

Pay attention to social equity, protect the interests of vulnerable groups, ensure that the benefits of regeneration projects are accessible to all residents, promote social integration, and reduce social disparities arising from urban regeneration.

SUSTAINABILITY

Focus on sustainability, reinforce ecological protection and the rational use of resources during the community construction process, encourage the adoption of green buildings and energy-saving technologies, and consider long-term operation and maintenance to ensure enduring improvements.

Figure 3: Field Survey

2.2.2 Economic and Industrial Revitalization: Transformation of Old Commercial and Industrial Areas

By focusing on projects such as revitalizing old commercial areas and regenerating former industrial areas, this category seeks to enhance the value of land resources, introduce innovative and creative industries, realize influx of population, and achieve the goals of sustainable economic development of old commercial and industrial areas while creating more jobs by means of industrial development, functional reshaping and spatial reconstruction. The typical characteristics of this regeneration path are:

INDUSTRIAL PLANNING

Emphasize adaptive industrial planning, highlight the adaptability and flexibility of industrial planning by considering the city's resource endowments and market demands, and promptly adjust industrial planning and regeneration strategies according to market changes and industrial dynamics, with certain space and elasticity reserved for future development during the regeneration process in response to future possible new industries and demands.

SPATIAL OPTIMIZATION AND RESTRUCTURING

Underline spatial optimization and restructuring, and through planning and integrating urban land resources, enhance functional layout of industries, improve land-use efficiency, foster industrial clustering effects, and facilitate the coordinated development of upstream and downstream enterprises.

INNOVATION-DRIVEN INDUSTRIAL

Stress the innovation-driven industrial development, highlight the cultivation of an innovation ecosystem, attract creative enterprises and talent, drive technological innovation and industrial upgrading, and promote the integration of traditional industries with emerging technologies.

BRAND BUILDING

Give priority to the creation of distinctive and influential industrial brands, enhance the city's industrial recognition and competitiveness, and strengthen urban marketing to promote the city's industrial advantages and investment environment.

2.2.3 Ecological and Environmental Protection: Ecological Restoration, Brownfield Remediation, Environmental Protection, and Resource Utilization

Targeting at regeneration projects such as brownfield remediation and the restoration of ecologically degraded areas, this category aims to, through ecological restoration, brownfield remediation and circular utilization of resources, restore the regional natural ecological foundation, advance a green and low-carbon transition, and achieve the goals of improvements in regional environmental governance and sustainable development after regeneration. Key characteristics of this regeneration approach include:

GIVE TOP PRIORITY TO ECOLOGY

Give top priority to ecology by emphasizing ecological protection and restoration, with a focus on revitalizing urban ecological functions as core goals. During the project planning and decision-making processes, take full account of the integrity and sustainability of ecosystems.

MONITORING AND EVALUATION

Focus on long-term monitoring and evaluation, and by establishing robust monitoring systems, carry out the long-term tracking on the effects of ecological restoration, evaluate and make adjustments based on monitoring results, and ensure that the ecological restoration projects can meet their intended goals.

SYSTEMIC PROTECTION AND REGENERATION

Emphasize systemic protection and regeneration, consider all elements of the urban ecosystem holistically, including water, soil, air and biodiversity, comprehensively use various ecological restoration technologies and methods and create synergistic effects in environmental protection.

INTEGRATE WITH URBAN DEVELOPMENT

Integrate with urban development, combine ecological restoration with urban economic development and social progress, achieve a balance of ecological, economic and social benefits, and make the environment a key competitive and attractive asset for the city.

2.2.4 Public Space Enhancement: Waterfront Areas, Squares & Parks, and Public Service Spaces

By regeneration projects such as waterfront area development, square and park construction, and public service space enhancement, this category aims to, through the park construction and renovation, pedestrian pathways, bicycle-friendly environment, and open space design, promote the openness and sharing of public spaces, and achieve the goals of maintaining biodiversity, fostering social interaction, and sustainable development of public spaces. The typical characteristics of this regeneration approach include:

ACCESSIBILITY AND OPENNESS

Emphasize accessibility and openness to ensure that public spaces are easily accessible by residents and visitors. This involves improving transportation connections, increasing public transit stops, or creating pedestrian pathways and bike lanes, so that people can easily access to parks, squares and other public spaces. Physical and visual barriers are removed to ensure public spaces can be open to everyone, without restrictions or segregation.

SOCIAL INTERACTION

Promote social interaction, and create environments that encourage communication and interaction. For instance, designing spacious public activity areas that invite group activities, street performances, and other communal events. Provide public amenities like drinking fountains and shared charging stations to facilitate people's stay and interaction in these spaces.

HUMAN-CENTERED DESIGN

Focus on human-centered design and consider the scale and experience of users, with attention to detail. Address the needs of vulnerable groups, such as providing barrier-free access for people with disabilities, the elderly and children.

SMART MANAGEMENT

Give priority to smart management, utilize modern information technology for management and services, and provide facilities such as smart lighting and wireless networks. For example, by providing activity information and navigation services in public spaces on mobile apps, utilize mobile apps to provide information and services in public spaces.

INTEGRATION OF CULTURE AND LOCAL CHARACTERISTICS

Highlight the integration of culture and local characteristics, and embody the local history and culture and regional features by incorporating the regeneration and renovation of public spaces. For example, installing sculptures, murals or small architectural features that reflect local cultural elements. Preserve and utilize buildings or sites of historical value as part of public spaces to inherit the city's memory.

2.2.5 Infrastructure Enhancement: Transportation and Municipal Infrastructure

For regeneration projects that improve transportation and enhance infrastructure, this category aims to, through transport system renovation, municipal pipeline network upgrading and sponge city construction, push forward the full upgrading of urban traffic and municipal infrastructure, enhance disaster tolerance and achieve the goals of improving urban infrastructure resilience and significantly enhancing disaster prevention capabilities. Key characteristics of this regeneration approach typically include:

THE IMPROVEMENT OF CARRYING CAPACITY

Highlight the improvement of carrying capacity, and better accommodate population growth and urban development by enhancing infrastructure through urban regeneration. For instance, expanding water and power supply facilities to meet the increasing demands of residents and industries. Optimize the transportation network, increase road capacity and alleviate traffic congestion.

MULTI-STAKEHOLDER COLLABORATION AND INNOVATIVE FINANCING

Stress multi-stakeholder collaboration and innovative financing, and organize the participation of government, businesses and social organizations in infrastructure regeneration projects. For instance, collaboration models where government guides, businesses invest, and social capital participates. Explore innovative financing methods, such as issuing special bonds or adopting Public-Private Partnership (PPP) models to expand funding sources.

INNOVATIVE APPLICATIONS OF TECHNOLOGY

Emphasize the innovation and application of technologies, introduce advanced technologies and materials, and improve infrastructure performance and efficiency. For example, using intelligent traffic management systems, new construction materials. Explore the application of new energy sources and new technologies in infrastructure, such as promoting electric vehicle charging stations and distributed energy systems.

REGIONAL COORDINATED DEVELOPMENT

Promote regional coordinated development and highlight balanced infrastructure development across different areas to reduce regional disparities. For example, increasing investment in infrastructure for old urban areas and suburban regions. Improve the interconnection between the city and surrounding areas and encourage the integrated regional development.

GREEN ENVIRONMENT PROTECTION CONCEPT

Focus on green and environmental protection concepts, and minimize energy consumption and environmental pollution in infrastructure construction and operation. For example, constructing green buildings, and promoting energy-efficient lighting. Develop green transportation and encourage public transit and non-motorized travel.

Figure 4: Renovation of Zhongshan Avenue, Wuhan

Figure 5: Surrounding Area of Hubei Provincial Museum

2.2.6 Historical and Cultural Preservation: Historical Streets, Buildings, and Industrial Heritage

With projects to renovate historical and cultural streets or restore historical buildings, this category focuses on micro-regeneration and micro-renovation of historical areas. Through authenticity preservation and integrity restoration measures, it aims to continue historical legacies and revitalize historical resources. This urban regeneration approach for historical and cultural preservation typically exhibits the following characteristics:

HISTORICAL AUTHENTICITY

Respect historical authenticities and retain the original appearances and structures of historical buildings, streets and cultural landscapes to the greatest extent possible. For example, when restoring old buildings or traditional courtyards, preserving their original construction materials, craftsmanship and layouts to avoid excessive renovation and reconstructions and ensure the accurate conveyance of historical information.

METICULOUS RESTORATION

Advocate meticulous restoration, give priority to preservation and rehabilitation, and rely on detailed investigations and studies of cultural heritage. Adhere to the principle of "restoring as before", employ "micro-regeneration, micro-renovation" methods, use specialized restoration technologies and processes, formulate targeted restoration plans to repair dilapidated buildings in historical and cultural areas, and refine the restoration of historical and cultural sites.

INTEGRAL PROTECTION

Emphasize integrity protection, with a focus not only on individual historical buildings but also on the surrounding environment and cultural atmosphere. For instance, preserving the street patterns, traditional neighborhood relationships and community functions of historical areas, and treating historical and cultural elements as an integrated whole for systematic protection and planning.

ADAPTIVE REUSE OF CULTURAL HERITAGE

Focus on the adaptive reuse of cultural heritages, and endow them with new functions and purposes to meet modern societal needs. Maintain a balance between preservation and development, fostering synergies between historical and cultural protection and urban economic and social development. For example, old factories may be transformed into creative industry parks or art studios, thus breathing new life into the historical heritage through appropriate utilization.

2.3

Urban Regeneration Cases

Sweden: Gjuteriet Foundry Renovation (2023)
Netherlands: Catharijnesingel Canal Restoration in Utrecht (2020)
Thailand: Chong Nonsi Canal Park in Bangkok (2022)
United Kingdom: The Tide, Greenwich Peninsula in London (2019)
Italy: Prossima Apertura Quartiere Toscanini (2021)
Singapore: GR.iD Commercial Property (2022)
Germany: HafenCity in Hamburg
South Korea: “Seoullo 7017” Skygarden in Seoul (2017)
The USA: Atlanta Beltline Project

2.3.1 Sweden: Gjuteriet Foundry Renovation (2023)

Gjuteriet is a building located in Malmö, Sweden, originally built in 1910 as a foundry producing metal castings for Kockums shipyard. During the 1970s, amid the energy crisis and the shift of traditional manufacturing industries, this industrial area gradually declined. To unlock the potential of this area, Malmö decided to undertake a regeneration project that would balance industrial heritage preservation with modernization. The primary challenge of this project was to protect the industrial character of this historical building while transforming it into a mixed-use, open space for modern office and public use. During the renovation, the core idea was to preserve the industrial heritage and maximize the use of recycled materials. The building's steel structure and brick walls were retained, but reinforced and reburnished using reclaimed bricks, wood, and other materials. The new structure used laminated wood, which could not only reduce carbon emissions but also enhance the building's load-bearing capacity. After the renovation, the building incorporated modern design elements alongside historical features, added insulated walls and glass curtain walls, and reopened windows and skylights to introduce natural light. The project achieved remarkable results, preserving historical traces of the building and enhancing communication and work efficiency of employees through flexible, open space design. The use of recycled materials demonstrated a commitment to sustainability, and contributed to the economic revitalization of the area. This case exemplifies the possibility of harmonizing historical preservation with modern needs, making it a successful model for industrial heritage renovation.

Figure 6: Renovation

2.3.2 Netherlands: Catharijnesingel Canal Restoration in Utrecht (2020)

Utrecht, located in central Netherlands, is an important hub for transportation. In the 20th century, part of the Catharijnesingel canal was filled in and reconstructed as highways to accommodate the need of motor vehicles. However, with the rise of the sustainable urban development concept, residents began advocating for the canal's restoration. In 2002, a referendum in Utrecht demonstrated public support for restoration of the historically significant Catharijnesingel canal. Collaborated with landscape architects and community groups, this ecological renovation project was initiated.

The main challenge was to reconcile historical preservation with modern demands while restoring the ecosystem and enhancing the urban resilience to meet citizens' expectations for a walkable and green environment. The project, completed in 2020, restored a section of the canal with the length measuring approximately 1.1 kilometers, added pathways and green parks, and achieved a harmonious coexistence between history and modernity by removing roadways and reinstating water and vegetation. The use of ecological slopes and floating vegetation islands along the banks not only improved water quality, but also provided habitats for biodiversity. The project encouraged community involvement and public activities, raising residents' awareness of ecological protection and stewardship of the riverbanks. Ultimately, the Catharijnesingel canal restoration succeeded in revitalizing Utrecht's ecological environment, expanding green spaces, enhancing the city's climate resilience, and promoting healthy lifestyles through pedestrian-friendly and sustainable transportation initiatives, thus becoming a model for urban regeneration in Utrecht.

Figure 7: Renovation

2.3.3 Thailand: Chong Nonsi Canal Park in Bangkok (2022)

Figure 8: Renovation

The Chong Nonsi Canal, located in the heart of Bangkok, was once an important waterway, but rapid urbanization and increasing pollution led to deteriorating water quality and a loss of ecological function in the surrounding environment. Significant ecological challenges were posed to Bangkok by rising sea levels and land subsidence triggered from climate changes. The Thai government decided to bolster this city's climate resilience by restoring the Chong Nonsi Canal, designating it as one of five key ecological pilot projects.

The main challenges of this project included restoring the canal's ecological functions, improving water quality, and addressing issues related to climate change, flooding, and land subsidence. Furthermore, the project needed to balance ecological restoration with modern demands in the context of rapid urban development, created green public spaces and encouraged public participation. During the restoration process, water from the Chao Phraya River was first introduced into the canal to flush it, pipes were laid to purify wastewater, and aquatic plants were planted in the canal to improve water quality. Roads along both banks were renovated into walkways, connecting the canal to residential areas with waterside terraces and scenic platforms. Elevated corridors and an ecological park were constructed along the canal, simulating natural hydrological features and designing streams, riverbeds, and waterfalls to enhance recreational functions and aesthetic appeal. The elevated corridors were equipped with seating, lighting strips, and misting systems to improve the park's comfort. The large-scale planting of vegetation effectively mitigated flood risks and land erosion, while expanding green space. As Thailand's first canal park, Chong Nonsi not only restored Bangkok's historical identity as the "Venice of the East" and became a new city landmark, but also enhanced the city's resilience through water quality improvement and climate adaptation measures. It provided a multifunctional recreational space for residents and tourists, and boosted local tourism development.

2.3.4 United Kingdom: The Tide, Greenwich Peninsula in London (2019)

Greenwich Peninsula is located in East London and bound on three sides by a loop of the Thames River. It was once a gas production center of Europe, but gradually became abandoned in the 20th century. To drive urban revitalization, the UK government launched a "Brownfield Regeneration" plan in 1996, with The Tide forming part of the plan to attract future residents by enhancing public spaces, and integrating creativity with nature and art. The primary challenge of the project was creating a public space with ecological, artistic, and cultural functions on an industrial wasteland, while connecting the city to the river and meeting the accessibility needs of diverse groups. The transformation adopted a double-layer linear design, combining elevated and ground-level walkways to create a unique riverside space along the Thames River. The Tide's elevated section was supported by 28 arch-shaped steel supports, forming elevated gardens and viewing platforms at the upper level, and offering excellent vantage sightseeing points for pedestrians. The lower level preserved natural hydrological features, providing walkways, meditation spots, and amenities like cafes to create a mixed-use open space. The park was extensively planted with native trees to enhance biodiversity, and incorporated accessible facilities such as gentle slopes and elevators in the design to ensure connectivity to all places. Public art installations within the park blended Greenwich's culture and history with modern artistic creativity. Now a significant landmark on London's Greenwich Peninsula, The Tide offers a green and healthy walking space that facilitates interaction between human and nature. Its inclusive design revitalizes the area's social and cultural vitality.

Figure 9: Renovation

2.3.5 Italy: Prossima Apertura Quartiere Toscanini (2021)

Figure 10: Renovation

The Prossima Apertura project is located in in the Toscanini neighborhood of Aprilia, Italy, a social housing area built in the 1990s that had long suffered from a lack of infrastructure and services, along with issues such as unlawful possession of homes and petty crimes. The main challenges of the project were how to transform vacant land into mixed-use public spaces with limited resources, address the community's infrastructure deficiencies and promote social interaction and cohesion among residents. During transformation, the project employed a tiered design, which divided the open space into a public square with three different levels: the high level, the intermediate level, and the low level. The high level hosted recreational facilities such as "The Ring", a circular climbing frame for children and teenagers, creating interactive spaces; the intermediate level had ramps and paths connecting all levels to facilitate exercise and relaxation; and the lower level offered a 300-square-meter "The Oasis" lawn surrounded by wooden seating and platforms for group activities and social gatherings. An important innovation of the project was the active encouragement of residents' participation through activities such as Paint'n'Play and Oratio, to strengthen the connection between the community and the public space. Meanwhile, the construction of the square and parks used recyclable materials, and permeable concrete was laid to collect rainwater for irrigating green areas, reflecting a sustainable design philosophy. The Prossima Apertura project successfully transformed the abandoned land into a community hub, improved the environment and facilities of the social housing area, fostered residents' interaction, and rebuilt the community cohesion.

2.3.6 Singapore: GR.iD Commercial Property (2022)

GR.iD, located in Singapore's Selegie Arts District, was originally a three-story street corner building that had gradually lost its vibrancy. Due to reduced pedestrian flow, GR.iD underwent a renovation to enhance its asset value, with the core objectives of increasing accessibility, fostering community interaction, and driving economic revitalization. The main challenges were how to maximize the utilization of spaces through limited renovation, attract more customers, promote community engagement, and restore economic vitality. The design team must transform the space into a multifunctional, creative venue while increasing rental yield and pedestrian flow to boost economic benefits. The renovation began with the transformation of the building's corner entrance, using a matrix-like design language with vivid colors and a distinctive brand logo. Simultaneously, the layout of the internal retail spaces was transformed, and increased shop areas by 35% to 50%. Moreover, a "social staircase" was added, enhancing connectivity between floors while providing seating and a stage to create a public space for social interaction and leisure. These design elements focused on vibrancy and creativity, using a combination of orange, blue, and white to energize the space. The introduction of pop-up stores, co-working spaces, and flexible social areas further encouraged community activities and public engagement. Ultimately, GR.iD was successfully transformed into a visual beacon in Singapore through the colorful design and visual elements with a post-industrial aesthetic. The newly added stores and flexible leasing spaces increased rental yields and became popular destinations for shopping, dining and socializing, thereby providing young people with spaces for learning and working, driving economic revitalization and enhancing community vitality.

Figure 11: Renovation

2.3.7 Germany: HafenCity in Hamburg

HafenCity is Europe's largest urban regeneration project, located in the former port area at the center of Hamburg. Once an industrial and warehousing hub, the free port area gradually declined following industrial downturns and a flood in the 1990s. To rejuvenate the area, the Hamburg city government launched the HafenCity project in 1999, with plans to transform it into a modern, mixed-use district of residential, commercial, cultural, and recreational spaces by 2030. The primary challenges of this project were how to preserve the waterfront character while enhancing flood protection and reviving economic vitality of the area. To this end, the design team planned to reconfigure the old port area's functions to support residential, commercial, and cultural spaces while addressing the climate change and flood risks through a sustainable design. HafenCity adopted a "co-existence with water" approach, featuring a three-tiered terrain to improve flood resilience. Waterfront promenades and terraces were connected to the water through steps and ramps, enhancing the area's water-friendly appeal as a public space. The project utilized the Warften technique in building pile foundations, raised structures about 8 meters above the ground, and installed floodgates to protect citizen's safety. To stimulate economic revitalization, the project developed 7,500 residential units and created 45,000 jobs, integrating retail, dining, office, and cultural facilities while optimizing the transportation network to promote walking, cycling, and public transit as low-carbon travel options. Today, HafenCity has successfully transitioned from an abandoned port area to a dynamic modern urban area, attracting around 8,000 residents. The innovative flood prevention technology and a waste-heat heating system have effectively reduced carbon emissions and promoted the area's sustainable development.

Figure 12: Renovation

2.3.8 South Korea: “Seoullo 7017” Skygarden in Seoul (2017)

The “Seoullo 7017” Skygarden was formerly an overpass built in the 1970s, which was closed to vehicle traffic in 2015 due to dilapidated infrastructure and safety concerns. To promote urban landscaping and enhance the functionality of public spaces, Seoul decided to transform the overpass into a green sky garden. The main challenges of this project were how to preserve the original structure while converting it into a vibrant public space, improving traffic flow, and strengthening residents’ connection to nature. The design team needed to consider the integration of urban landscaping and the spaces of public activities, as well as ensuring facility safety and accessibility. MVRDV worked together with the Seoul Metropolitan Government and designed a 938-meter-long pedestrian garden that retained the overpass structure and had 52 types totaling 24,000 plants planted to provide a year-round green landscape. The garden adopted a “pocket park” concept, dividing the space into multiple smaller gardens with unique plant combinations and designs, offering diverse spatial experiences. Sixteen small facilities, including cafes, shops, exhibition spaces, and public stages, were built to meet various public needs. To improve accessibility, 17 pathways were added to connect the overpass with surrounding buildings, subway stations, and public squares, along with stairs and elevators to ensure barrier-free access. The transformed “Seoullo 7017” not only alleviated traffic pressure and enhanced transportation efficiency in the area, but also attracted a significant number of visitors, and spurred economic development in the surrounding areas. Its economic benefits are estimated to be 1.8 times the renovation cost, making it a successful example of urban regeneration of Seoul.

Figure 13: Renovation

2.3.9 The USA: Atlanta Beltline Project

The Atlanta Beltline is one of the largest urban regeneration projects in the United States of America. The project, centered around a 22-mile abandoned railroad, planned to create 33 miles of trails, 22 miles of modern streetcar lines, and 2,000 acres of green space, thus comprehensively upgrading the city's transportation system, living environment, and economic development. Atlanta's long-standing reliance on car traffic led to low public transit usage and severe urban congestion. The main challenges for the Beltline project were how to reconstruct the city's transportation network through transforming abandoned railroads, enhance the accessibility of green spaces, and improve residents' traffic experience. The project would establish a green link between urban transport and public spaces by converting abandoned railroads into walking and cycling paths and streetcar routes. The project is progressed in 10 sections, with the completed Eastside and Northside trails preserving old railway bridges and retaining walls while adding pedestrian crossings, bike paths and safety facilities. The streetcar system integrates with existing metro and bus networks to create a diversified transportation network. Moreover, the project also intends to enhance public spaces, and improve the inclusivity of transportation and public spaces by transforming contaminated sites into parks, incorporating sustainable stormwater management facilities, and providing barrier-free pathways to pedestrians. The Atlanta Beltline is expected to not only improve the urban transportation, reduce vehicle emissions and promote healthy, green travel, but also generate over $10 billion in economic benefits, create numerous job opportunities, provide more green spaces for communities of Atlanta, and improve residents' quality of life.

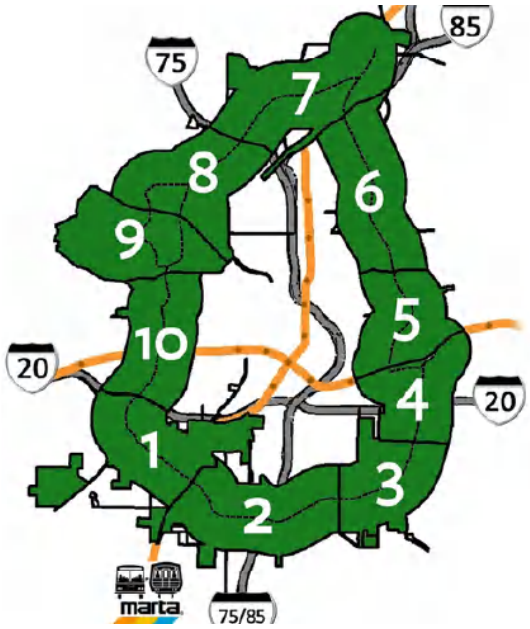

Figure 14: Project Zoning Plan

Figure 15: Renovation

03

Urban Regeneration Practices of Wuhan

- Overview of Wuhan' s Urban Regeneration
- Jiangxinyuan Community: Urban Regeneration by Inclusive Community Construction
- Hanzheng Street: Sustainably Progressive Urban Regeneration of Economic and Industrial Area
- Wugang Yungu 606: Regeneration of Old Industrial Parks from the Perspective of Industrial Revitalization
- East Lake Dali Village: "Micro-renovation" of Village in Scenic Areas for Multi-stakeholder governance and Sustainable Prosperity
- Sino-French Peninsula Town: Eco-Environmental Protection and Infrastructure Enhancement for Ecological Resilience
- Qingdao Road Cultural and Artistic Area: Overall Regeneration of Historical Areas from a Multicultural Heritage Preservation Perspective

PRACTI-CES

URBAN REGENERATION PRACTICES OF WUHAN

Wuhan, also known as “Han” or “River City”, is the capital of Hubei Province, lying in the heart of China where Yangtze River and Han River converge. This central city of China is uniquely divided into three parts by the two rivers, thus forming a distinctive urban layout of “two rivers converging, three towns standing”. With an extensive network of rivers, lakes and ports, a quarter of the city’ s total area is covered by waters, which shape a unique eco-environment characterized by “vast rivers and lakes, and a grand city”. Wuhan is a historical and cultural city, rich in historical heritages and cultural content, with ancient landmarks such as Yellow Crane Tower and Guqin Terrace witnessing its long history. The city is also an important industrial base, a science and education center, and a comprehensive transportation hub of China. It boasts the most complete industrial categories, with numerous universities and research institutions to power the city’ s development. On a land area of 8,569.15 square kilometers, Wuhan has a permanent population of 13.774 million and an urbanization rate of 84.79% in 2023. In recent years, Wuhan has made significant progress in urban construction and development, and continually enhanced its urban quality and residents’ living standards by urban regeneration. Meanwhile, Wuhan actively advocates technological innovation and cultural prosperity, and strives to become a modern city with international influence.

3.1

Overview of Wuhan’s Urban Regeneration

A Brief History of Wuhan’s Urban Regeneration
ransformation of Wuhan’s Overall Approach to Urban Regeneration

3.1.1 A Brief History of Wuhan's Urban Regeneration

Since the founding of the People's Republic of China, urban regeneration in Wuhan has undergone four stages:

1949-1977

The first stage was a period of recovery where the focus was on improving basic living conditions.

1978-2000

The second stage coincided with the early phase of the reform and opening-up, aimed to meet new development needs.

2001-2020

The third stage, from 2001 to 2020, was a period of rapid growth with urban regeneration driving the economic development.

2021to present

The fourth stage, from 2021 to the present, represents a new phase of development with regeneration for a better life.

// 1949-1997

At that time, Wuhan was rebuilt from devastation, aiming to construct itself as an industrial, technological, cultural and transportation hub during China's grand economic development. Existing residential areas were dilapidated, service systems were disorganized and infrastructure was inadequate. Under the unified planning of the municipal government, efforts were devoted to expand residential areas, improve urban sanitation and basic living conditions, demolish old low-rise houses, develop urban transportation, and renovate municipal facilities. During this period, the main arterial road system of the three towns began to take shape, and living conditions improved.

// 1978–2000

During this period, Wuhan's priority shifted from industrial manufacturing to urban construction. To revitalize the market economy, improve urban environment, and address housing difficulties, the city conducted a series of renovations, such as upgrading commercial and residential areas, reconstructing dilapidated shelters, improving water bodies and landscaping, widening roads and improving pavements, and expanding sanitation and municipal facilities. The importance of an overall approach wasn't aware of, and with the paid land use system still in its exploratory stage, most projects were small-scale, sporadic renovations or "facade" and "patchwork" upgrades along roads. The renovation covered Baocheng Road, villages in Hankou, such as Jiuli, Huaqiao, Caijiadian and Dongting, and several arteries like Middle Section of Jiefang Avenue, Qingnian Road, Jianghan Road, Hong Kong Road-Dazhi Road, Jinghan Avenue, Yanjiang Avenue, Zhongnan Road, and Yingwu Avenue.

// 2001–2020

Between 2001 and 2012, Wuhan's urban construction accelerated, witnessing the rapid real estate development and an increasingly important role of planning in guiding urban construction. Comprehensive renovations began in factories (courtyards), communities and villages. In this period, under the general guideline of "renovating old towns, expanding new urban areas, emphasizing city axis development, and strengthening coordinated development", residential and commercial projects were developed along shorelines in Wuchang and Hankou, key functional areas were constructed, and a series of large public facilities such as International Expo Center and Qintai Grand Theater were built. A total of 126 urban villages underwent independent renovation, with the launch of unified land acquisitions and redevelopment projects, thus significantly improving urban functions and the environment.

// 2021 to present

As the city enters a phase of high-quality transformation and development, "balancing incremental and current developments" has become the "new normal" of urban development. In 2023, Wuhan was selected as a pilot city for redevelopment of low-efficiency urban land use by the Ministry of Natural Resources. Faced with the reality of increasingly scarce internal spatial resources and a transition in development mechanism, urban regeneration has become an inevitable choice for Wuhan in this era of planning considering the current status to meet its citizens' growing longing for a better life.

3.1.2 Transformation of Wuhan's Overall Approach to Urban Regeneration

Entering the new phase of transformation, Wuhan has actively aligned itself with the United Nations' Sustainable Development Goals and the New Urban Agenda initiatives. Based on the development concepts such as New Urbanism, Smart Growth, and Anti-Gentrification, Wuhan's overall approach to urban regeneration has gradually transitioned from massive demolitions and reconstruction focusing on the reconfiguration of urban spaces towards organic regeneration and comprehensive renovation. Bearing in mind Wuhan's urban traits as a historical and cultural city, a city of rivers and lakes, an industrial base, and a city with numerous universities, it stresses the humanistic pursuits of urban residents, with an aim to improve the urban quality, enhancing functionality, and preserving cultural heritage to fully strengthen citizens' sense of happiness and well-being. In this new phase of development, Wuhan's urban regeneration approach emphasizes the following four transitions:

Transitioning from a Model Focusing on Urban Form to a People-Centered Development Approach

In Wuhan's urban development process, the concept of urban regeneration has undergone a transition from a model focusing on urban form to a people-centered development approach. During Wuhan's earlier rapid development stage, the urban regeneration primarily focused on urban form development. It gave priority to urban form and spatial layout of the city and created a modern urban landscape by massive demolitions and reconstruction. Skyscrapers erected, and broad roads crisscrossed the city. However, this approach usually neglected practical needs of residents, disrupted the original community ecosystem and cultural inheritance, and led to the issue of gentrification in renovated areas.

Now, as Wuhan enters the phase of high-quality development, a people-centered development approach becomes central to the current urban regeneration. It focuses on the needs of people in the city, centering on residents' quality of life, emotional needs and social interactions. The regeneration planning takes the needs of residents into full account, such as their needs for daily commuting, leisure, education and healthcare, so as to create convenient and comfortable living spaces. At the same time, protecting and preserving the city's historical and cultural heritages is also laid stress on, allowing people to feel the city's memory and warmth in modern life. Guided by the people-centered development approach, urban regeneration is gradually evolving towards integrated and systematic updates in the areas of physical environment, social networks, economic life and cultural preservation.

Transitioning the Goal from Homogeneity to Diversified and Integrated Development

The goal of urban regeneration is undergoing a profound transition from homogeneity to diversified and integrated high-quality development. In the past, urban regeneration stressed "growth", "output" and other homogeneous concepts, such as economic growth. It aimed to make room for commercial development through massive demolition and reconstruction and boost the city's economic strength. However, this approach often leads to problems such as disruption of history and culture, aggravated social stratification, and neglect of eco-environment.

As a megacity to grow to be a global city, Wuhan is being rapidly integrated into international networks, with growing demands for sustainable urban development. Urban regeneration has thus become essential to link social, economic, cultural and ecological systems. Since the start of the 14th Five-Year Plan, Wuhan has revised its urban regeneration strategy to align with the United Nations Sustainable Development Goals (SDGs), and set the regeneration goal to build a livable, green, resilient, smart and people-centered city. To develop the economy, a sustainable economic model is adopted, emphasizing industry upgrading, innovation-driven growth, and fostering of emerging industries through urban regeneration, so as to realize the diversified and sustainable economic growth. For cultural preservation and inheritance, the emphasis is on protecting and utilizing historical buildings and traditional neighborhoods in old urban areas to retain the city's memory while revitalizing old neighborhoods by developing the cultural tourism industry. For social security, urban regeneration requires to meet the needs of different social groups, provide equitable public services and housing to prevent social stratification, and enable residents of all income levels to have a sense of belonging and well-being in the city. The ecological environment is also very important. By encouraging green and resilient regeneration, measures such as increasing parks and green spaces, improving ecological water systems and enhancing infrastructure, are taken to strengthen the city's ecological quality while making it more resilient, realizing the harmonious coexistence between human and nature.

Transitioning from Expansionism to Smart Growth

Expansionism once a dominant approach for urban development. It emphasized the continuous outward growth of urban areas through massive land development and infrastructure construction to meet the needs of urban development. However, this approach led to a series of problems. First, it increased traffic congestion, energy waste and a decline in urban efficiency due to disorderly expansion. Second, public services in newly developed areas often lagged behind, causing inconvenience for the life of residents.

After a long period of rapid economic growth, Wuhan's urban development has transitioned from "rapid expansion" to "balancing incremental and current developments" in this high-quality transformation phase. Under the New Urbanism concept, smart growth as a new urban regeneration approach emphasizes concentrated and compact development within existing urban areas. First, smart growth fully considers the city's resource capacity and eco-environmental needs, transitioning from "demolition-reconstruction-preservation" to "preservation-renovation-reconstruction-management", thus avoiding disorderly massive demolitions harmful for urban ecosystem and overall development. Second, it promotes an efficient land use by redeveloping idle land and abandoned buildings to maximize the utilization efficiency of land resources. Third, smart growth advocates for mixed land use, and encourages the integration of residential, commercial and office functions to make an effective use of renewal resources, reduce commuting distances and reduce traffic pressure. It also gives priority to green development, offering residents with green transportation options to alleviate traffic congestions and environmental pollutions. Currently, the smart growth regeneration model and means have become a primary strategy for Wuhan's urban regeneration. Through scientific and reasonable regeneration planning, the city can achieve the compact development, functional integration and ecological conservation to build a city that is livable, business-friendly, and tourist-friendly.

Transitioning the Government-driven Regeneration to Multi-stakeholder Participation

The implementation of urban regeneration in Wuhan is undergoing a significant transition from a government-led model to multi-stakeholder collaboration. In the past, urban regeneration was mainly driven by the government, who played a leading role in urban regeneration and update through planning, funding and organization. This approach was effective in improving urban infrastructure and living conditions to some extent. However, it also had some limitations, such as financial pressures on the government that made it difficult to funding massive regeneration projects, as well as potential inflexibility and incomplete information in decision-making, which made it challenging to meet the diverse needs of different stakeholders.

Entering the new phase of development, Wuhan is facing various challenges in urban regeneration. It begins to emphasize the collaborative participation of the government, market and the public, thus breaking the traditional model of government control and transitioning from “multiple leadership” to “collaborative participation”. Functional departments are coordinated to form a municipal regeneration leadership group serving the guiding and regulatory roles, formulating policies and regulations, and offering public services and infrastructure. Enterprises, leveraging their financial and technological advantages, participate in urban regeneration projects through investment and construction while changing from profit-making to also considering public welfare. The general public, as the city’s owners, are participants of urban regeneration. Their needs and opinions should be fully respected and considered, with a shift from feedback collection to active participation. Meanwhile, professionals may provide technical support and consultation for urban regeneration, and change their role from “technological support” to “diversified functions”.

With the support of the provincial and municipal governments, more and more organizations, business departments and social groups in Wuhan are participating in urban regeneration, and offering richer perspectives, more fertile grounds and more long-lasting momentum for the city’s development. This has led to the formation of a healthier, more harmonious and more positive mechanism of joint construction, co-governance and sharing in urban regeneration.

City of Wuhan	Category	Project	Basic Features
Megacity with a large population	Residential community livelihood improvement	Jiangxinyuan Community	Promoting comprehensive regeneration of old residential areas through community co-construction
National central city	Economic and industrial revitalization	Hanzheng Street	Progressive regeneration with acupuncture-like interventions, integrating new and old to guide historical preservation and the development of distinctive industries
Old industrial base	Economic and industrial revitalization	Wugang Yungu 606	Regeneration and renovation of old industrial sites
Green villages and scenic villages	Public space enhancement	East Lake Dali Village	Renovation of green villages and scenic villages to create distinctive waterfront public spaces
City of mountains, rivers, and lakes	Infrastructure enhancement and ecological restoration	Sino-French Peninsula Town	Combining ecological restoration projects to create a model for urban infrastructure regeneration
Famous historical and cultural city	Historical and cultural preservation	Hankou Historical and Cultural Zone - Qingdao Road Area	Demonstrating urban regeneration models of historical and cultural areas across different historical stages of Wuhan

Table 1: Wuhan Urban Regeneration Case Classification Table

Considering Wuhan's urban characteristics, six typical renewal projects are selected according to six categories of urban regeneration to reflect the "Wuhan features" in urban regeneration.

2.2

Jiangxinyuan Community: Urban Regeneration by Inclusive Community Construction

Category: Residential community improvement
Keywords: Co-creation, cultural heritage, community governance, long-term service

From Lakeside Park to Micro-spaces within the Community: Creating an All-Age-Friendly Living Environment to Illuminate the Old Community
Using Public Space Landscape Enhancement as a Starting Point to Build a Collaborative Community Governance Platform
Leveraging Cultural Cohesion to Highlight the Value of Intangible Cultural Heritage Through “Small Investment + Quality Craftsmanship”
Continuously Promoting “Planners Entering the Community” to Provide Long-Term Professional Technical Services for Community Micro-regeneration

Jiangxinyuan Community, located on the eastern shore of Moshui Lake in Hanyang District, Wuhan, is a typical old community within the recreational area surrounding the lake. With urbanization advancing, native villagers living on fishing in the district were relocated to this community, making it one of the first "village transitioning to modern community" in Wuhan and the largest resettlement community for former rural residents. The community covers a total land area of 170,000 square meters, with 41 residential buildings, 2,016 households, and a total population of 6,587. Centered around a rich fishing tradition, the community has developed a unique local culture known as "Gaolong"[1] and is home to China's first AAA-level[2] intangible cultural heritage park. There is also a national conservation and demonstration base of intangible cultural heritage production line, featuring 54 key intangible cultural heritage projects at the national, provincial and municipal levels. An increase of population over the years have made Sanlipu Road and Jiangxinyuan Road the most vibrant neighborhoods in Hanyang District.

The Jiangxinyuan Community Regeneration Project, launched in 2023, aims to solve key issues of the old community, such as dilapidated residential quarter, lack of public services and weak community cohesion. As a key urban regeneration project in Hanyang District, it adheres to the principles of low cost, high quality and refined management to conduct micro-renovations and micro-regenerations tailored to the community's characteristics, with an aim to preserve the community's cultural fabric, revitalize the community dynamics, and improve the living environment and quality of life. The project is carried out from four dimensions: beautification of public spaces, establishment of community governance platforms, inheritance and promotion of intangible cultural heritage, and long-term service by planners.

Figure 16: Geographic Location Map of Jiangxinyuan Community (left) and Bird's View of Jiangxinyuan Community (right)

Gaolong, also known as Dragon Dance, originated during the Zhenguan period of the Tang Dynasty, is a unique dragon lantern art specific to Hubei Province and has been designated as a national intangible cultural heritage of Hanyang District. [1]

China's scenic areas can be divided into 5 levels from AAAAA, AAAA, AAA, AA and A. AAAAA is a normative and standardized quality rating system and the highest level of honor of the tourism scenic spots in China. To become the 5A-scenic area, one should pass 12 inspection items such as transportation, tourism safety and capability.[2]

3.2.1 From Lakeside Park to Community Micro-space: Creating an All-age-friendly Living Environment to Illuminate the Old Community

Although Jiangxinyuan Community is adjacent to Moshui Lake, due to a lack of connection with the lakeside park, residents find it challenging to access the superior natural environment of the area. The planners first proposed to create green corridors leading to the lakeshore, link the pathways circling the lake, and create a waterfront area with vitality, providing residents of lakeside communities with high-quality green spaces accessible from their doorsteps.

Within the community, planners from Huazhong Agricultural University, leveraging their expertise in landscape horticulture, have utilized idle community spaces to design the landscape environment under the concept of "creating an all-age-friendly community environment". They have proposed a detailed public space enhancement plan. Specifically, the plan includes the establishment of cultural and science education areas to make an innovative use of the corridor landform. The design integrates the cultural elements of intangible cultural heritage to foster a deeper connection to the community's intangible cultural heritage. The design also fully considers the needs of surrounding residents for recreational activities, and plans spaces for parent-child interaction and communication. Furthermore, the plan envisions a fishing culture experience area that integrates elements to enhance the visual effects of intangible heritage features and provide visitors with an interactive experience. In addition, a horticultural bonsai co-creation area is established to encourage residents' participation in community landscaping and gardening. By planting and maintaining greenery, residents can strengthen their sense of belonging and fulfillment.

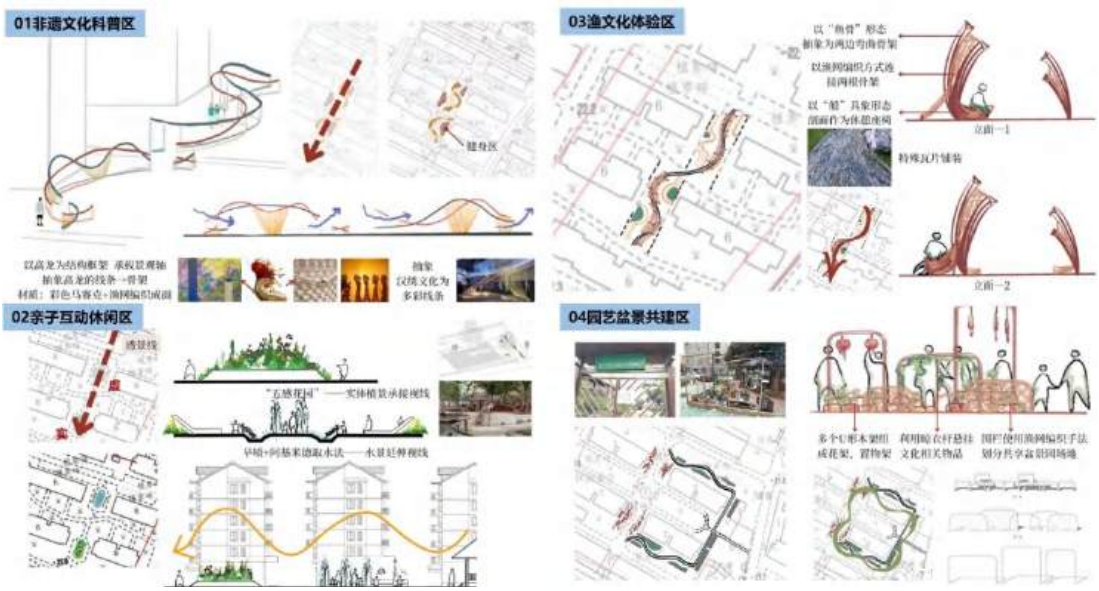

Figure 17: Landscape Improvement Concept Design of Jiangxinyuan Community

3.2.2 Using Public Space Landscape Enhancement as a Starting Point to Build a Collaborative Community Governance Platform

Figure 18: Workshop on Co-creating Public Spaces of Jiangxinyuan Community

In the landscape design process, the planners abandoned the traditional "elite" design paradigm. The project team has established the Jiangxinyuan Planning Workshop for the eastern public space of Moshui Lake. The workshop brings together the planning bureau, planners, the community and residents, with the participation of teachers from universities, experts and local residents. The goal was to determine a plan that residents feel satisfactory. A co-governance platform was formed during the design process where planners guided residents to participate in planning and decision-making, so that their voices can be heard and their needs can be satisfied, thus securing public support for the project implementation.

Figure 19: Residents' Participation in Landscape Care in Jiangxinyuan Community

The project was supported by multiple funding sources, such as government funds, social capital, funds raised from residents, and special-purpose bonds to provide stable funding for transformation, balance interests of all stakeholders, and mitigate risks.

The renovated public gardens are collectively owned by the community, with different parts assigned to various resident groups, who are responsible for their daily maintenance. Residents can adopt and cultivate vegetation, participate in the setting of maintenance standards, and hold regular activities such as the "Most Beautiful Garden" competitions. A monitoring and operation mechanism can be set up to ensure that public spaces and facilities are continuously maintained, and residents' self-management and service skills are cultivated to improve the community governance.

3.2.3 Leveraging Cultural Cohesion to Highlight the Value of Intangible Cultural Heritage Through "Small Investment + Quality Craftsmanship"

To effectively expand the influence of the intangible cultural heritage ("ICH") brand, the project team skillfully utilized Jiangxinyuan Park as a carrier of public spaces, and employed multi-dimensional cultural empowerment strategies to extend cultural projects to the eastern shore of Moshui Lake. This resulted in the creation of Wuhan's first cultural park incorporating ICH elements. Also, based on the existing natural environment and infrastructure of Jiangxinyuan Park, a refined renovation strategy was implemented to maximize social and environmental benefits with minimal economic investment. The design included the creation of a micro-topographic park by using elevation differences, the installation of the iconic "Dragon Dance" sculpture as the centerpiece of the cultural plaza, and the construction of the Red Bridge Corridor linking the Wetland Science Park, Moshui Lake Observation Tower and the ICH Cultural Plaza. They enriched the cultural content of the park, improved the spatial connectivity, provided visitors with an immersive interactive experience, and ensured the efficient use of resources and the broad dissemination of the culture.

While constructing the physical space, efforts were made to further expand the influence of the ICH brand of “Dragon Dance”. Planners organized cultural activities together with the government and the community, so that residents and visitors could have a deeper understanding of the community’s cultural traits. The activities were held under the leadership of Hanyang District Natural Resources and Urban-rural Development Bureau, in conjunction with Landscape Architecture Department of Huazhong Agricultural University, Jiangxinyuan Community and Wuhan Jiangrenfang Landscape Co., Ltd., which formed a strong cooperative network. Through online promotion and inviting heritage craftsmen to regularly host activities, it not only fostered deeper cultural connections and unique visual effects, but also maintained the park’s vitality and appeal, and shaped its distinctive cultural identity.

Figure 20: Concept Design of Jingxinyuan Intangible Cultural Park

Figure 21: Gaolong Dragon Dance of Jiangxinyuan Community

3.2.4 Continuously Advancing “Planners Entering the Community” to Provide Long-term Professional Technical Services for Community Micro-regeneration

The planner team, comprising members from backgrounds in planning, architecture and landscape design, including university faculty and students, design professionals and planning managers, participated in all phases of the project, from research and technical consultation to space renovation, activity organization and community maintenance, to ensure the smooth progress of the project. Serving as a bridge between the government, design firms and residents, the planners effectively communicated the needs of all parties, and facilitated the project’s successful implementation.

By widely soliciting feedback from residents of the community and building on Jiangxinyuan Community’s rich street culture and foundation of intangible cultural heritage, the Hanyang Branch of Wuhan Natural Resources and Planning Bureau led a collaboration among Huazhong Agricultural University’s Landscape Architecture Department, Jiangxinyuan Community, Wuhan Jiangrenfang Landscape Co., Ltd. and other parties. They successfully organized a series of community-based renovation activities, such as planting flash mobs and upcycling old objects, which encouraged residents to participate in the planning and construction of gardens and embodied the concept of “My Garden, My Choice”. Residents were guided to co-create, co-manage and share the beautiful home environment. At the same time, activities like flea markets, traditional culture fairs, nature science lectures, workshops and other participatory cultural events were planned to promote the evolution of the community’s public spaces in a dynamic and engaging manner. These activities attracted widespread attention and received positive responses from the public. Community residents, volunteers and professionals, among others, enthusiastically took part in the planning, construction and maintenance of those gardens.

Figure 22: Jingxinyuan Community Talks, Government Mobilization Meeting & Field Visits

Figure 23: Multi-stakeholder Participation in the Co-creation

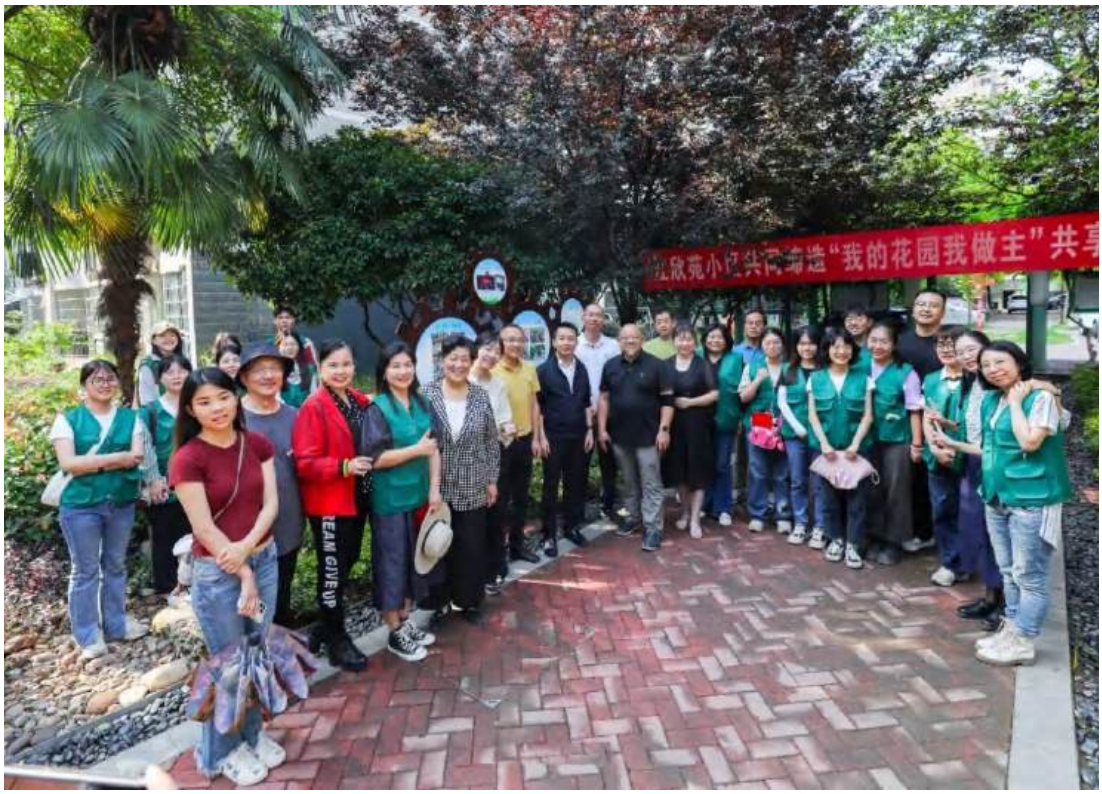

Figure 24: Photograph of Planners, Residents and Volunteers in the Co-created Park

Planners immersed themselves in the community, lived and worked alongside residents to fully understand their needs and expectations, thus ensuring that the design solutions were both professional and closely aligned with residents' daily lives. Throughout the process, the professionals not only provided planning assistance but also offered comprehensive technical support to residents, so as to ensure the long-term, stable and sustainable operation of the community regeneration project.

At present, the green spaces between residential units 105, 106 and 107 in Jiangxinyuan Community are undergoing renovation, with a design area of over 7,000 square meters. Through nearly two years of active exploration, from November 2022 to present, the community has established a cooperation model of "government + university + community + enterprise + residents", which can provide a positive collaboration paradigm for low-cost, high-quality and refined community regeneration.

Figure 25: Comparison of Jiangxinyuan Community Before and After Renovation

3.3

Hanzheng Street: Sustainably Progressive Urban Regeneration of Economic and Industrial Area

Category: Economic revitalization
Keywords: Integration of old and new, gradual evolution, historical area, revitalization

Concentrating on Three Complementary Industries for Sustainable Industrial Ecosystem Development
Focusing on Three Types of Spaces to Implement Targeted Strategies for Comprehensive Enhancement of Spatial Quality
Serving Three Groups of People, Providing Needs-based Support, and Creating a Diverse and Inclusive Living Environment
Integrating Three Forces, Refining the Framework, and Promoting Implementation

Figure 26: Today's Hanzheng Street

Hanzheng Street, located at the confluence of two rivers, lies in the heart of the city. It has flourished as a commercial trade hub in a history of over 500 years, with local and migrant businesspeople, workers, and administrators coexisting and thriving together, who were born there, worked there and passed on generations by generations until this place became a legend. Throughout its history, Hanzheng Street has experienced both prosperity and decline. Today, Hanzheng Street stands as a typical area where new urban vitality and old cultural charm converge, embodying the city's evolution through the ages. With its self-regeneration over a period of one hundred years in coincidence with the approach to "progressive urban regeneration" advocated in the new era, Hanzheng Street carries the mission of revitalizing Wuhan's historical area.

As an integral part of Wuhan, a national central city, Hanzheng Street not only holds profound historical and cultural significance but also serves as a core area for the development of modern commercial services. In Wuhan's overall development strategy, Hanzheng Street is tasked with becoming an internationally renowned commercial district and a driving force for regional economic transformation and upgrading. It is not only a shining pearl along the Yangtze River Economic Belt but also a key node in Wuhan's efforts to build a national central city and impel the rise of Central China. Through ongoing, progressive urban regeneration, the area strengthens its "Trading and Tourism" (Double-T) development strategy, and establish an overall functional model of "One Core, One Axis, and Two Wings". Here, "One Core" refers to the commercial hub at the confluence of the two rivers, targeted at attracting commercial services and multinational corporate headquarters to form a world-class core area.

The “One Axis” is a central green corridor of the herringbone shape, which can enhance the overall intention of the urban development pattern through the iconic landscape axis. The “Two Wings” focus on commerce and culture to the east, and trade and cultural tourism to the west, and support the transformation and upgrading of traditional industries. This model aims to build Hanzheng Street as an international trade center and a business service core in Central China, and inject new vitality into the economic and social development of Wuhan and the broader central region.

Figure 27: General Layout Plan

Despite having a promising future, Hanzheng Street is currently confronted with challenges, such as difficulties in industrial transformation and upgrading, poor spatial and environmental management, and an underdeveloped social governance system. To realize its development vision and overcome current bottlenecks to its development, Hanzheng Street has chosen a “sustainable and progressive regeneration” approach that integrates historical traditions with modern concepts to drive its transformation and development from three dimensions: industrial advancement, spatial optimization, and improvements in the living environment and social governance.

3.3.1 Concentrating on Three Complementary Industries for Sustainable Industrial Ecosystem Development

As the original wholesale trade industry faces bottlenecks, Hanzheng Street is leveraging its three distinct advantages: the historical commercial heritage of Hankou, the traditional garment industry, and its strategic positioning in the city, to develop three core industries that are complementary with each other. This aims to drive the transformation and upgrading of the industrial ecosystem in Hanzheng Street, and facilitate the prosperity-oriented sustainable growth of the street.

Revitalizing the 500-year Historical Commercial Heritage to Develop the Cultural Tourism Industry

Bolstered by Hanzheng Street's 500-year commercial heritage of "Old Hankou", the theme "Walking Old Streets, Hearing Old Stories, Tasting Old Flavors" integrates various historical and cultural resources such as historical streets, cultural relics and intangible cultural heritages. The design plans to connect traditional blocks and landmarks like Xin'an Jiuru and Baoshan Hongyan along the historical Zhongshan Avenue. Employing a "mushroom planting" micro-regeneration strategy, the street aims to quickly establish a unique regional identity IP with minimal investment over a short period, attract visitors and create a self-growing hotspot and engine. Then, by utilizing event marketing and creating sensation, the street may continue to attract visitors and customers, accumulate "traffic" and draw in more cultural creativity brands. The goals are to gradually form a cluster of cultural buildings and brands, foster a distinctive feature of cultural experience spaces, promote iteration of business patterns and push up rental prices in the street. New industries such as urban leisure, culture and arts are cultivated along Zhongshan Avenue, while tourism, art exhibitions, cultural creativity experiences and tourist accommodations are expanded in Xin'an Jiuru. The revitalization of the cultural tourism industry complements the local garment trade, turning Hanzheng Street into a cultural tourism landmark known for shopping, dining, entertainment and accommodations.

Enhancing the Ready-to-Wear Strength Through Industrial Upgrading and Expansion to Prolong the Chain and Strengthen the Garment Sector

As the cradle of Wuhan-style fashion, Hanzheng Street was once renowned nationwide for its women's clothing. Until now, this remains its largest and most dynamic industrial sector. However, it becomes less popular than before due to competitions from emerging brands of women's clothing across the country. But considering its mass production and deep-rooted traditions, there is still a great potential for future growth through transformation and upgrading. In the future, Hanzheng Street will develop "beauty textile, beauty clothes and beauty stores", push forward industrial transformation and grow strong the garment sector. Efforts will be devoted to the transformation in three key areas: first, focusing on the development of Yunshang to boost existing core business patterns in original design, digital and smart processing, and garment retail; second, expanding and strengthening the value chain by promoting e-commerce, brand showcasing, custom tailoring and live-streaming along Duofu Road and in Jinzhenmao; and third, fostering cross-industry connections by introducing heritage shops and artisan studios in central malls of Hanzheng Street, and deploying new forms of business such as garment sale, hands-on experience and home furniture experience. Trendy flagship stores and creative fashion workshops of "bicolor weaving" in Xin'an Jiuru will also be developed, combining "fashion and cultural tourism" to rejuvenate the garment industry.

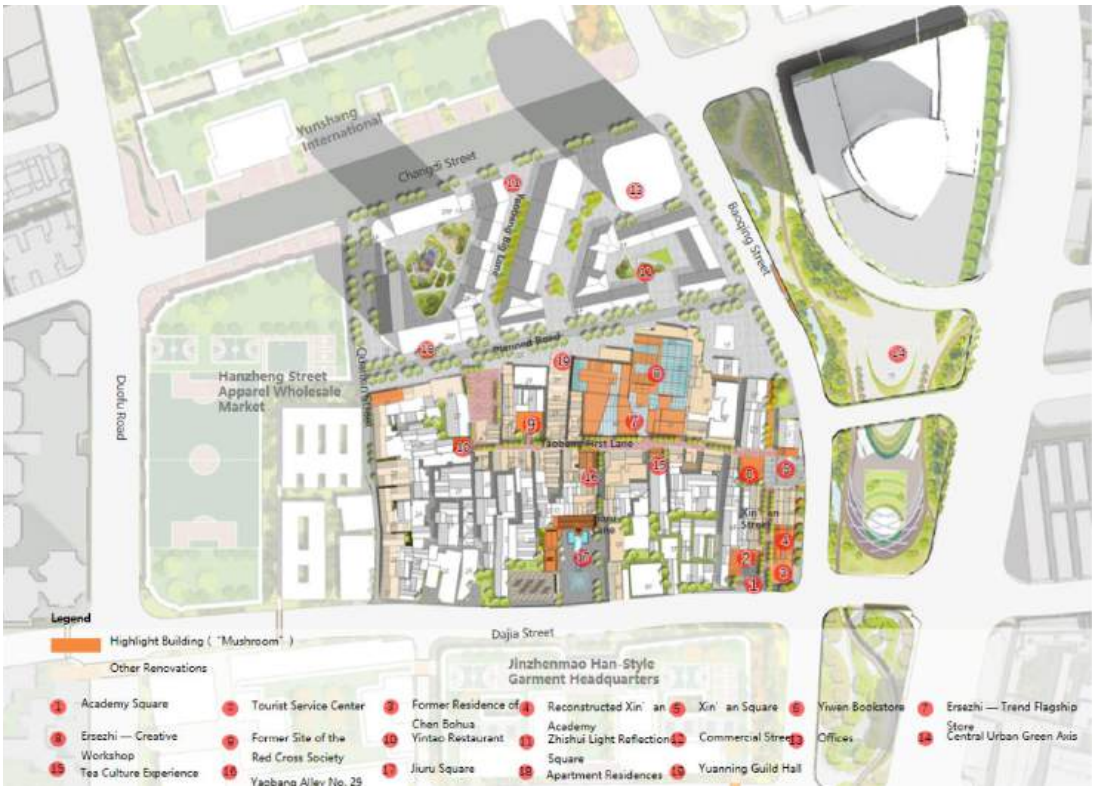

Figure 28: Regeneration Plan of Xin'an Jiuru Area

Concentrating Functions and Promoting Modern Service Industries at the Confluence of Two Rivers

Situated at the confluence of two rivers, Hanzheng Street is naturally positioned as a "geographic core", "commercial center" and "functional focal point", thus becoming the natural cradle for a central business district according to the general rule of urban development. Guided by the functional positioning of Hanzheng Street in the overall national land planning, it intends to attract modern service industries to Fosun Bund Center and surrounding areas, and taking advantage of existing commercial retail and garment wholesale sectors. Bearing in mind the needs for industrial transformation and upgrading, the high-end commercial services, financial services, digital and smart trade, and corporate headquarters are introduced to further invigorate the area's industrial vitality, solidify its role as a central urban area and create a modern trade and service industry cluster.

3.3.2 Focusing on Three Types of Spaces to Implement Targeted Strategies for Comprehensive Enhancement of Spatial Quality

Over its 500-year history, despite many changes, Hanzheng Street not only retains its traditional "fishbone" street layout, grand historical sites, multi-story residential buildings for industrial workers, wholesale markets backward from roads into buildings, but also has high-rise buildings constructed in recent years. They form hybrid architecture and mixed streetscape with distinctive urban character. For urban areas of different forms, Hanzheng Street implements targeted strategies to guide the spatial regeneration.

Preserving Traditional Layout and Promoting "Acupuncture" Style Renovation of Historical and Cultural Spaces to Highlight the Area's Cultural Characteristics

Featuring abundant historical and cultural resources, Hanzheng Street has many historical buildings and traditional streetscapes. However, due to a lack of integration, it couldn't form a coherent cultural identity, and the active utilization of these resources. For this reason, the area employs multi-level and multi-angle strategies for cultural heritage revitalization, aiming to protect and enhance the overall historical landscape.

Emphasis is put on the comprehensive protection of historical spaces in the four key areas with concentrated cultural resources: Hanzheng Street, Xin'an Jiuru, Qingfen Mozhiqiao, and Yongkangli, for preserving the "fishbone" street pattern that is characteristic of Hanzheng Street, and constructing a unified historical landscape. To revitalize 65 historical buildings of various forms scattered throughout Hanzheng Street, new functions such as Wuhan's cultural experience, boutique accommodations, and trendy retail spaces are embedded partially through restoration and functional adaptation, and open public spaces and iconic architectural nodes are created to reinvigorate individual iconic historical buildings or scenic points. Zhongshan Avenue and 27 surrounding traditional historical streets are renovated and reused to build a network of distinctive cultural axes. By connecting the various historical and cultural resources of Hanzheng Street through spatial continuity and cultural themes, it aims to enhance the cultural experience and integrate the historical features into a unified display and comprehensive use.

Figure 29: Historical Space Plan

Optimizing Industrial Spaces Through Progressive Renovation of Market Spaces to Enhance Industrial Development Environment

With 59 markets of various types, Hanzheng Street's commercial spaces emerged during the "Three Old Renovations"[3] in the 1990s and were transformed from street-front shops into indoor spaces. Although these markets are the backbone of local commercial industry, they can no longer meet the industry's further development needs and have negatively affected local residents' quality of life to some extent. To address the issue of industrial spaces, the plan proposes to, under the guidance of building an industrial community, gradually improve infrastructure by progressive regeneration and renovation, ameliorate the spatial environment for the industry, achieve the integrated structure of urban-industrial development, and optimize the industrial development environment of Hanzheng Street.

Ten industrial communities are built along Duofu Road and Hanzheng Street, around some markets with the "commercial space under the residential space" pattern. The "high and low street" spatial system on and above the ground unique to Hanzheng Street is utilized to realize the appropriate separation and specific allocation of production and living facilities while achieving the district-wide integration of industry and urban life through the unique spatial structure of high and low street. The upper levels of the markets, currently unused, are transformed into "high street" pedestrian corridors for leisurely walking, with living amenities at the upper levels of podia linked, and gaps in cultural and sports facilities filled up to supplement the community construction, thus providing better living spaces for residents at the upper levels. At the same time, the "low street" pedestrian network is improved, with 22 market service facilities, such as investment promotion centers, information centers and consultation centers, to enhance market-related service functions and cater to the needs for industrial upgrades by the market. Through a progressive regeneration approach of "one building, one policy", considering the types of goods and business needs of low-street markets, renovations are tailored to market spaces, to improve display areas and storage spaces, ameliorate cargo transportation, purchase and tourism routes, upgrade customer service experience and optimize internal and external environment of these markets. Finally, the new collaborative urban-industrial integration spaces can be linked with each other.

[3] The "Three Old Renovations" is a renovation model of China, which mean the renovations of old towns, old factories and old villages.

Creating Distinctive Spaces and Innovatively Promoting High-quality Urban Space Development to Enhance the Area's Central Role

Centered around key nodes like the planned herringbone-shaped green axis, Hanzheng Terrace, and urban reception hall, the development plan incorporates selective demolition and regeneration to provide necessary development spaces for the introduction of core urban functions and the creation of distinctive urban character.

The herringbone-shaped green axis, a historical pathway starting at Hanzheng Terrace and extending to Zhongshan Avenue, is built. By means of demolition and renovation, the project pushes forward the regeneration and renovation of themed open spaces such as trendy fashion bases, cultural and commercial tourism cores, urban reception hall, "breathing waterfront city terrace", Badahang Memorial Park, and Runway Park, to create the largest cultural green lung in the city center and establish the core landscape axis for Hanzheng Street.

Leveraging unique waterfront resources at the confluence of two rivers, Hanzheng Terrace features a continuous, multi-layered and eco-friendly slow walking pathway along the waterfront, and blends nature with urban spaces. The eastern expansion zone and revitalization land lots can enhance the functionality of ground-floor spaces in waterfront buildings, create a highly public and open riverside city interface, bring vibrant public spaces to life, and showcase the distinctive waterfront urban landscape of Hanzheng Street.

A "world-class urban reception hall" is developed along the Yangtze River, incorporating the Fosun Bund Center and iconic waterfront buildings in the financial district. This area is designed to serve high-quality commercial and residential functions, set a benchmark for international trade dialogue, become a prominent architectural landmark, and reinforce the distinctive urban character of Wuhan's core area along shorelines of the two rivers.

3.3.3 Serving Three Groups of People, Providing Needs-based Support, and Creating a Diverse and Inclusive Living Environment

The prosperity of Hanzheng Street is attributed to generations of enterprising people. As the houses of native residents have become aged, and the workforce and new talents are still in search of suitable accommodations, different measures are taken to meet the diverse needs of these groups. The aim is to ensure that all groups can find suitable living conditions and thrive together.

Improving Living Conditions of Native Residents and Eliminating Shortcomings in Old Neighborhoods

Most native residents of Hanzheng Street live in traditional residential communities built around the year 2000 or even earlier, where dilapidated infrastructure and adverse environment have negatively affected their quality of life. Hence, tailored housing renovation will be implemented in areas concentrated with native residents, including Baoshan Hongyan, Rendong New Village, Hanzheng Street redevelopment area, and Xiaoxinli Cultural Theme Block. The design plan coincides with the renovation of old residential communities and precisely caters for residents' needs. After conducting surveys on the specific conditions of each community, regeneration and renovation standards are set for basic, enhanced and advanced categories, with targeted renovation of houses, improvements of living environment and addition of infrastructure. These standards can enable the regeneration to meet personalized needs of different groups of people, actively promote the perfection of communities and construct living spaces that are convenient, smart, diverse and inclusive.

Ensuring Affordable Living Environments for Workers and Innovating Rental Housing Supply

Centered around industrial communities, to address local workers' needs for nearby, comfortable and affordable housing, the supply of rental housing units is increased through various innovative approaches.

First, the change from traditional property development and sales model to a combined sale and lease model is encouraged, guiding areas such as Chubao, Qingfen, Yuejin and Yangtze Food Factory to provide housing units for rent.

Second, state-owned enterprises like Qiaofang are encouraged to participate in the construction and operation of rental housing units through new construction, acquisitions or renovations.

Third, social participation is also advocated, particularly for the "upper-level residence" portions of markets undergoing redevelopment, where private capitals are allowed to establish rental housing companies, set up rental housing funds, and participate in rental housing construction and management. House owners are also permitted to list vacant properties for sale on a unified rental platform. At the same time, the government sets high standards for rental housing renovation and construction, ensuring that local workers can access comfortable, safe, and high-quality living conditions while keeping prices affordable.

Facilitating Talent Recruitment and Advancing Construction of Future-oriented Residential Communities

To cater to the needs of modern service industries, samples of future residential communities are developed with key functional spaces in line with the principles of integration into urban life, people-centered design, joint development and sharing. The planning, design and construction of these communities are guided by the sustainability concepts, including green buildings, renewable energy and resource recycling. Smart systems are incorporated, such as smart home systems, intelligent community services and intelligent transportation systems. The community culture is enriched and a variety of housing types are designed to meet the needs of different household structures and lifestyles. Shared living spaces are developed for better interaction and communication among residents, with comprehensive and enriched community amenities that focus on people-centered design and smart management. Therefore, communities become friendly for people of all ages, and in the light of residence, services and policy, integrated into the urban fabric to create dream homes for attracted talents.

3.3.4 Integrating Three Forces, Refining the Framework, and Promoting Implementation

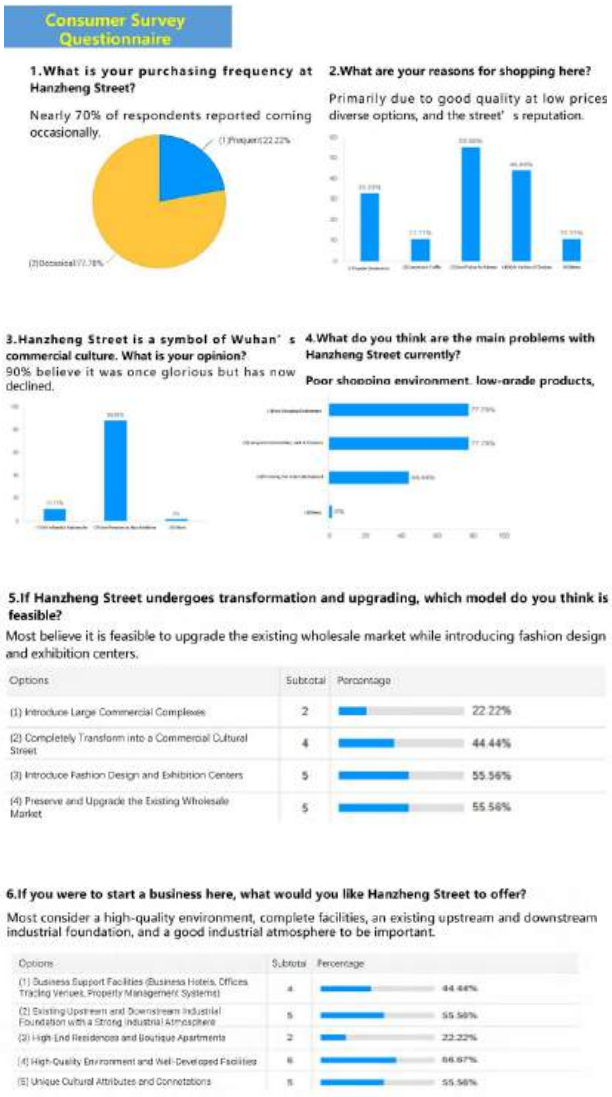

Figure 30: Consumers' Questionnaire Analysis

Hanzheng Street has historically been a melting pot with a diversified population structure and mixed demographics, making social governance a longstanding challenge. The regeneration project focuses on these three groups of people: residents (mainly native inhabitants and tenants), business operators (primarily merchants, workers, and platform operators), and administrators (mainly district government, street offices, and community organizations). By strengthening platform construction and providing network services, the area's social governance capabilities will be comprehensively improved.

Multi-stakeholder governance platforms are established under the concept of co-creation with the participation of residents, business operators and administrators. Three multi-stakeholder governance platforms are set up in Hanzheng Street, organized at the street level to integrate the strengths of administrators, businesses and residents. This approach can enable sustainable and inclusive regeneration through multi-stakeholder collaboration.

Administrators serve the functions such as policy making, resource integration and community governance, while advancing the hardware regeneration through local building relocations, infrastructure improvements and other groundwork. Business operators leverage their financial, technological and human resources to participate actively in planning and executing regeneration projects, and push up property values in the market.

Residents participate in community governance by joining the co-governance committees, voicing their concerns, offering suggestions, and actively participating in and overseeing the implementation of community affairs. In this way, strong organizational efforts can be pooled to strengthen the leadership in development, services and governance, thereby gathering the momentum for neighborhood development. A community governance coalition is established to bring together market entities, functional departments, co-construction unit, and entrepreneurs for joint operation and management, talent development, space utilization, event organization, decision-making and community safety. This approach can lead to a community governance pattern of coordinated regional development, joint construction and sharing. The following measures will be taken, namely strengthening cooperation and communication among departments, industries, business associations, communities and markets, setting up rules for discussions and decision-making, facilitating project co-construction, information sharing and resource integration, aligning community resources, and catering for residents' needs to foster sustainable and inclusive regeneration through multi-stakeholder collaboration.

Figure 31: Field Survey Photos

3.4

Wugang Yungu 606: Regeneration of Old Industrial Parks from the Perspective of Industrial Revitalization

Multi-stakeholder Governance to Promote the Transformation and High-quality Development of Heavy Industrial Areas

Spatial Planning for Industrial Development to Promote Efficient Industrial Introduction and Sustained Urban Vitality

The “Preserving the Old, Weaving the New, Restoring as Before” Strategy to Promote Industrial Heritage Preservation

“Micro-intervention” Brownfield Landscape Management to Achieve Environmental Transformation from “Gray to Green” at Minimal Costs

Supporting the Park’s Industrial Development in the Full Lifecycle and Promoting Sustainable Economic Prosperity

Wugang Yungu 606, located at the “East Gate” of Wuhan Iron and Steel Corporation (WISCO) to the east of Wuhan Railway Station, is an industrial park with nearly 70 years of history. Covering an area of 40.33 hectares, it was built in 1954 as Wuhan Metallurgical Equipment Manufacturing Company under the former Ministry of Metallurgical Industry. It was transferred under the administration of Wuhan City in 1985, and merged into WISCO in 1992. In 2016, following the restructuring of Baosteel and WISCO Group, WISCO consolidated its production capacity and relocated part of Wuhan Metallurgical Equipment Manufacturing Plant’s operations to the main plant area, thus freeing up approximately 15 hectares of industrial land.

The plant was once mainly a supplier of the metallurgical sector, with products made for sectors such as metallurgy, chemical, machinery, hydropower, building materials and construction. Covering a total area of 220,000 square meters, the plant has experienced six rounds of construction and became one of the sites within Wuhan’s main urban area where industrial heritages are relatively concentrated and well-preserved. It has more than 30 buildings with preservation value, such as factory and office buildings, with the largest building as large as 26,000 square meters, reflecting a strong industrial character and carrying the valuable memories of the times. The plant is also home to eight infrastructure facilities, including two water towers, a chimney, three gantry cranes, two other structures, and two soft cultural facilities, namely a statue of Chairman Mao Zedong and a historical slogan, which hold a significant historical value.

Figure 32 : Bird’s View of Wugang Yungu 606 After Regeneration

3.4.1 Multi-stakeholder Governance to Promote the Transformation and High-quality Development of Heavy Industrial Areas

Wugang Yungu 606 adopts a collaborative model of "leading enterprise + government platform + technological team" to guide enterprises for independent renovation of parks and strengthened coordination of the area. The "leading enterprise", WISCO Group, was the first ultra large steelworks established after the founding of the People's Republic of China. Under today's macroeconomic background of "reducing excess capacity", WISCO has put forward a strategy to optimize its industrial structure, and actively develop emerging industries such as intelligent manufacturing, energy conservation, environmental protection and big data. It has chosen Wugang Yungu 606 on the west side of the main plant as a pilot area, and leverages its geographic advantage as WISCO's gateway and its "catalyst" effect to facilitate the development of strategic emerging industries. The "government platform" is a joint working group formed by the district government, planning authority and municipal reserve agency, to be responsible for comprehensive coordination, land reserve management and infrastructure development and relieve enterprises from worries about regeneration through enhanced policies and funding. The "technological team", composed of local planning institutes and high-level organizations, systematically makes planning, addresses issues such as industrial integration, project coordination and construction scheduling, and provides technical support and follow-up services during the subsequent planning and implementation stages.

3.4.2 Spatial Planning for Industrial Development to Promote Efficient Industrial Development and Sustained Urban Vitality

The spatial planning, centered on industrial development, aims to facilitate corporate transformation and upgrades, particularly for heavy chemical companies like WISCO. To help resolve operation difficulties, the planning team conducted in-depth research to identify the plant's resources and advantages. They coordinated with potential partners in smart IoT and intelligent robotics, and engaged in multiple rounds of technical studies with professional planning and architectural design teams. The plan emphasized both fulfilling urban functional requirements and achieving business outcomes, with surrounding areas developed into a balanced industrial-residential community under the perfect community concept, providing service facilities such as talent apartments, fashion hotels and creative cafes, catering to business needs while accommodating future urban growth. This approach aims to create a vibrant 24-hour park for innovation and diverse activities.

3.4.3 The "Preserving the Old, Weaving the New, Restoring as Before" Strategy to Promote Industrial Heritage Preservation

While respecting the site's existing conditions, a strategy of "preserving the old, weaving the new" is proposed. "Preserving the old" aims to retain the most concentrated historical memory with the most well-preserved plant sites in Wuhan's central urban area, preserve industrial symbols such as water towers and lathes, and maintain original industrial symbols and texture of factory buildings. For the initial phase, internationally renowned planning and architectural firms have been invited to renovate 13 distinctive buildings, covering nearly 30,000 square meters, in accordance with the "restoring as before" concept. "Weaving the new" involves introducing new functional buildings and eco-friendly spaces, integrating innovative functions into "large-span plant buildings", and through overall reconstruction overlapping new and old buildings, meeting the needs of new industries for large-space facilities while imbuing them with contemporariness.

3.4.4 “Micro-intervention” Brownfield Landscape Management to Achieve Environmental Transformation from “Gray to Green” at Minimal Costs

The project fully implements a “micro-intervention, localized, carbon-reducing” approach to brownfield management, replacing mildly contaminated soil within the park. The landscaping favors local vegetation over expensive ornamental flowers, thus creating semi-natural or man-made plant communities. A sustainable urban drainage system is built by introducing perennial flower meadows, trees, shrubs and rain gardens to reduce surface runoff during extreme weather and alleviate the long-standing waterlogging risk in the area. Idle industrial components are repurposed to create functional and engaging landscape facilities and build a vibrant and resilient public space at minimal environmental and financial costs.

Figure 33: Photo of Wugang Yungu 606 After Regeneration

3.4.5 Supporting the Park's Industrial Development in the Full Lifecycle and Promoting Sustainable Economic Prosperity

For implementation and operations, the pre- operations are emphasized to strengthen the "linkage of primary, secondary and tertiary" land markets and serve the park's full lifecycle of "planning–design–construction–operation". Take the clearly planned "new technology" industry as an example.

A comprehensive overview of the industrial chain has been presented to identify the catalogues of "key potential target companies" and "opportunistic investment promotion". Over 140 preliminary interviews with target companies have been conducted, and according to the space requirements of target companies, platforms for new technology products have been provided to meet the growth needs of different companies. Moreover, a survey was conducted on the office market of Wuhan, with strict control over the supply of traditional offices for better destocking.

The urban design phase has been completed, with the initial development zone built up and opened in June 2023 as an innovation park for "Tech + Cultural Innovation". In October 2023, Wugang Yungu 606, one of the venues for Wuhan Biennale, attracted numerous professionals from the industry and citizens to pay a visit. So far, the park has successfully signed agreements with many innovation companies in animation, live streaming, and tech finance, reaching a signing rate of 90%, making it a popular investment destination for those companies. In March 2024, WISCO Group and Goldenport signed an agreement at Wugang Yungu 606 on the construction of the Goldenport NEV World Industrial Park, for R&D of new energy vehicle technologies and autonomous driving experience testing. In May, Dongchedi Car Mall Wuhan Store, the largest offline car mall in China, settled in Wugang Yungu 606. The store covers an area of nearly 20,000 square meters, with a showroom capable of displaying over 600 vehicles at the same time, thus being able to provide an automotive cultural experience. In the future, WISCO will further invest RMB 10 billion in Wugang Yungu 606 and its surrounding areas to build the Baowu Wuhan headquarters, and continually attract upstream and downstream industry chains and affiliated companies to shape the Baowu industrial ecosystem of innovation.

Figure 34: Photo of Large Investment Project Dongchedi Car Mall

3.5

East Lake Dali Village: “Micro-renovation” of Village in Scenic Areas for Multi-stakeholder governance and Sustainable Prosperity

Category: Rural revitalization

Keywords: Jingzhong Village, multi-governance, cultural creativity industries

Multi-stakeholder Participation for Co-creation

Micro-renovation with Minimal Intervention to Improve Environmental Quality

Simplified Approval Processes and Policy Innovation

Creating an Industrial Ecosystem and a Collaborative Platform

Figure 35: Main Village Entrance

Figure 36: Chu Pottery Art Museum

Figure 37: Donghu 177 Art Restaurant

Dali Village, located at the south gateway of Moshan Scenic Area, lies in the heart of the East Lake Scenic Area, adjacent to Wuhan Botanical Garden, East Lake Cherry Blossom Garden, and East Lake Plum Garden, and is one of the four natural sections of Qiaoliang Village. As the East Lake's greenways gradually open, Moshan Scenic Area has become one of the most popular scenic areas of East Lake. In contrast, Dali Village's haphazard construction over the years led to disordered buildings, narrow roads and a lack of municipal facilities, failing to fit for East Lake's reputation and meet development needs of the scenic area. In 2019, leveraging the opportunity provided by the Military World Games, the East Lake Scenic Area Administrative Committee initiated the first phase of "micro-renovation" in Dali Village, covering an area of about 10 hectares, involving over 120 buildings, with a total construction area of 120,000 square meters. The "micro-renovation" approach, emphasizing multi-governance, joint construction and sharing by multiple stakeholders, transformed Dali Village into "First Cultural Creativity Village on the Land of Hubei" in the Moshan Scenic Area.

Figure 38: Photo of Large Investment Project Dongchedi Car Mall

As a cultural creativity gem of the East Lake Scenic Area, Dali Village's renovation showcased distinctive characteristics in organizational models, renovation methods, approval procedures, and operational management. The project incorporated the creativity and suggestions of villagers, merchants, artists, designers and social organizations, resulting in a unique environment that blended the local rustic charm with modern artistic elements through ongoing renovation efforts, and making it the most brilliant scenery of the East Lake Scenic Area.

Figure 39: Master Layout Plan of Dali Village Phases One and Two

3.5.1 Multi-stakeholder Participation for Co-creation

The project adheres to the principle of co-creation through government guidance, village-level organization, participation of villagers and merchants, and university-led design to meet the practical needs of the community and villagers and fulfill the governance goals at the grassroots level.

Firstly, a moderate investment is provided by the government for infrastructure improvements

The government invests RMB 65 million to improve municipal infrastructure, eliminate fire safety hazards and enhance the internal environment of the village, while villagers and merchants spend nearly RMB 200 million to renovate existing buildings and courtyards and achieve improvements in 65 dilapidated houses, facades and the environment, thereby elevating the overall environmental quality of the village.

Figure 40: Donghu Time Tunnel

Secondly, owners led the renovation to improve buildings

Without altering original structures, cultural creativity buildings were renovated by owners, while other buildings are renovated by villagers and merchants according to the facade improvement plans provided by the Scenic Area Administrative Committee. This approach can achieve the best effects at minimal costs.

Thirdly, in collaboration with universities throughout the renovation, teams from universities provided services on site

Faculty and students from the Departments of Planning, Architecture, Landscape, Art, Public Management at the School of Architecture and Urban Planning and the Department of Sociology, Huazhong University of Science and Technology were actively involved in all phases of the village renovation, from planning and architectural design to construction guidance, housing renovation guidance, as well as the formulation of village management rules, thus enabling the transformation of Dali from an “urban village” to a “cultural creativity village”.

Figure 41: Onsite Services by Faculty and Students of School of Architecture and Urban Planning, Huazhong

3.5.2 Micro-renovation with Minimal Intervention to Improve Environmental Quality

Firstly, through micro-renovation, the project retained the village's original landscape and improved public spaces

It retained the village's original landscape as much as possible, and reasonably planned road networks according to the distribution of buildings, roads, vegetation and water bodies, under the principle of "minimizing tree removal, avoiding lake filling and limiting demolition". By micro-intervention and smart layout planning, the village's road system was well linked to expand public spaces.

Figure 42: Photos of Buildings Before (Left) and After Renovation (Right)

Secondly, through minimal intervention, the project reasonably determined the village's design standards as appropriate to local conditions

By avoiding "over-planning" and "over-design", the renovation allowed for "industry autonomy, business autonomy, design autonomy and creative freedom" without unified requirements for roof color or materials, leaving room for non-standard designs, spaces, economy and business patterns devised by designers, villagers, merchants and owners of cultural creativity museums.

This can not only reduce renovation costs, but also improve the environmental quality and economic vitality through inclusive community participation.

Figure 43 : Pompei Restaurant Before and After Renovation

3.5.3 Simplified Approval Processes and Policy Innovation

Firstly, the “micro-renovation” model simplified administrative procedures

Since Dali Village was designated by the Scenic Area Administrative Committee as the micro-renovation model, it did not involve land use changes and building increments, except for minor fire safety-related demolitions, without the need of obtaining the “planning permission”, thus significantly reducing the time cost of project implementation.

Secondly, policy innovation for micro-renovation

The Scenic Area Administrative Committee introduced the "Three Original Principles" (renovating in original sites, maintaining original building heights and areas) in the form of meeting minutes. This policy not only greatly reduced bureaucratic costs of applying for "dangerous building assessments" and "construction permits" per household, but also decreased institutional expenses for project implementation and governance at the grassroots level.

3.5.4 Creating an Industrial Ecosystem and a Collaborative Platform

Firstly, the project leveraged cultural creativity resources, created an industrial ecosystem and drove industrial development

Phase One of the Dali Village project pooled a large number of artisans, artists and designers. It introduced diversified business patterns such as shops, restaurants, cafes and homestays in combination with cultural creativity to enrich the cultural tourism experience of visitors. Various cultural activities, such as art exhibitions, cultural salons, workshops and seasonal markets, are regularly organized to further revitalize the industry.

Secondly, collaboration was established for sharing with multiple stakeholders

The project built a community with shared interests comprising villagers, owners of cultural creativity museums, residents' committees and platform companies. This collaboration aimed to promote the development of the cultural creativity industry, and achieve a win-win situation among villagers, owners of cultural creativity museums and merchants, thereby improving residents' living conditions and the environment for merchants' entrepreneurship, developing the collective economy of the community, building a cultural brand for the scenic area and transforming the village from a residential area to a tourist destination.

Currently, Dali Village has embraced the cultural creativity industry, homestays and dining businesses, and attracted 54 small to medium-sized cultural creativity and tourism service companies. In consequence, over 500 jobs were created, including more than 120 for local villagers, with their income increased by over fivefold. The three educational platforms—the "Co-Creation" classroom, the "Big Ideological and Political Education" classroom, and the "Off-Campus" Party School[1] classroom—contributed to the formation of a distinctive cultural tourism brand for Dali Village, making it a popular attraction in the East Lake Scenic Area. This not only improved the village's environment but also promoted the development of the cultural creativity industry and tourism services, thereby fostering an integration between the scenic area and the village, raising villagers' income, and exploring a new path for co-creation of villages in scenic areas.

Looking ahead, the second phase of Dali Village's renovation will address the over-homogenization issue identified in the first phase. The village will reclaim existing collective housing units (39,000 square meters) for unified leasing and operations, introduce functions such as tourism service hubs, branded hotels and experiential performance venues to fill gaps in tourism services and provide more complete facilities for Moshan Scenic Area. The design has already passed the site selection approval by the Forestry and Grassland Administration of Hubei Province.

By reference to Dali Village's renovation model, neighboring villages such as Dongtou and Maowuling explore new approaches to village-wide renovations and unified leasing operations, with an aim to facilitate the integration of villages and the scenic area, enable all stakeholders, including villagers, merchants, the village and the government to share the benefits of development, and achieve win-win outcomes for all.

This report is deeply indebted to Professor Hong Liangping, and Mr. Zhu Jiaoteng and Mr. Ding Boyu from Huazhong University of Science and Technology, who provided valuable materials and documents for the research.

Party School is an education institution that trains Chinese Communist Party (CCP) cadres. [4]

Figure 44: Rural Footpath

Figure 45: Main Village Entrance

Figure 46: University of Science and Technology

3.6

Sino-French Peninsula Town: Eco-Environmental Protection and Infrastructure Enhancement for Ecological Resilience

Category: Ecological and environmental protection, municipal infrastructure
Keywords: Ecological resilience, environmental governance, waterfront spaces, collaborative development

Giving Priority to Ecology, Building an Eco-space Framework, and Restoring Urban Habitat Functions
Innovative Rain and Flood Management, Building a Natural Water Network System, and Enhancing Urban Resilience
Enhancing Process Control, Building Pollution Interception and Purification Barriers, and Achieving Zero Increase in Watershed Pollution
Sharing Ecological Resources, Creating Multidimensional Waterfront Public Spaces, and Integrating Urban and Ecological Spaces

Sino-French Peninsula Town is situated in the southeast of the Sino-French Wuhan Ecological Demonstration City, on the northern shore of Houguan Lake. The terrain is generally flat, sloping from high in the north to low in the south, with a central ridge running from the middle to the two sides. The area features a unique topography with "three sides bound by the lake, surrounding with ponds, and turtle-back extension". The site includes numerous lakeside ponds, with wetlands covering 25% of the area. The ecological lakeshore stretches 4.5 kilometers, providing rich lakeside wetland ecological resources, good ecological base, and high vegetation coverage. However, the town faces pressing issues such as inadequate protection of the ecological environment, incomplete supporting infrastructure, unregulated water drainage, insufficient resilience to extreme rainfall, water pollution in the lake and ditches, regional ecosystem degradation, and a lack of lakefront landscapes and vitality, all of which affect the sustainability of the eco-environment and the resilience of infrastructure.

Figure 47: Figure: Location Map of Sino-French Peninsula Town in Wuhan

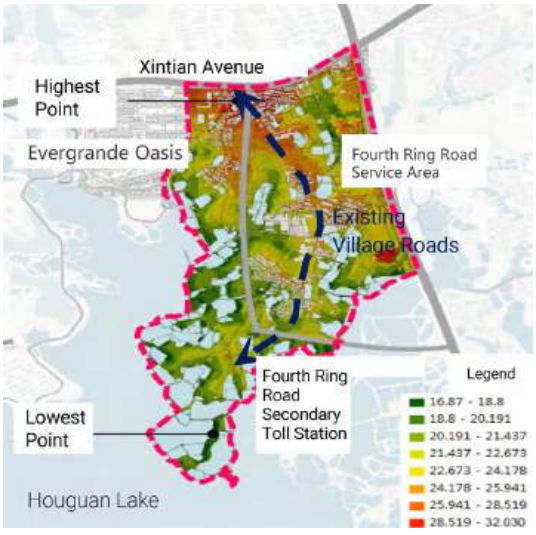

Figure 48: Current Site Distribution

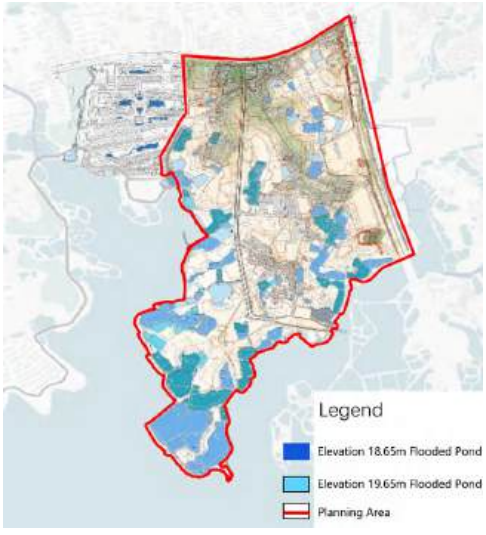

Figure 49: Current Pond Distribution

To achieve the coordinated development between urban and ecological spaces, Sino-French Peninsula Town has actively explored the explore the “Wuhan Standard” in the field of ecological construction. It proposes the concept of new infrastructure regeneration, and advocates for the coexistence of urban areas and nature. With the ecological protection and restoration as the core value, and the natural infiltration and ecological sharing as the guiding principles for regeneration, the town preserves and leverages the existing ecological resource framework while exploring pathways for implementing resilient infrastructure regeneration.

The project highlights the unique lakeside location advantage, preserving the existing ecological resources through micro-renovation, and introducing the functions such as ecological restoration, safety resilience, environmental management, and waterfront space utilization, endowing the site with new capabilities. Following the principles of “minimal disturbance, lowest cost, highest standards, and optimal ecology”, the regeneration strategy adopts the concepts of “high eco-resilience, safety risk prevention, zero pollution increment, and space to promote interaction”. This approach fully protects and utilizes the site’s original water network and resource endowments, giving priority to the identification and preservation of ecological spaces, thereby establishing a water-centered ecological safety protection framework. Within these ecological spaces, existing rivers, wetlands, ponds, and low-lying areas are interconnected and micro-renovation into natural water networks and lakeside wetland chains. This system integrates drainage, water storage, and pollution purification functions into an eco-friendly drainage and purification system without pipelines. Additionally, the urban ecological landscape features are incorporated, allowing natural infiltration from external ecological spaces to create multidimensional waterfront public spaces. The plan aims to restore urban ecosystems, enhance the urban resilience and safety, continuously improve the urban environment, and achieve balanced development between people and the land.

Figure 50: Sino-French Peninsula Town Base

Figure 51: Photo of Sino-French Peninsula Town After Renovation

Figure 52: Bird's View of Sino-French Peninsula Town After Renovation

3.6.1 Giving Priority to Ecology, Building an Eco-space Framework, and Restoring Urban Habitat Functions

Figure 53: Photo of Sino-French Peninsula Town After Renovation

In line with the principle of "optimal ecology", the project identifies existing lakes, wetlands, rivers, ditches, and other ecological resources as the bases for urban ecological space. Using ecological restoration techniques that transition from the city to nature, urban ecological spaces are used as flexible media that allow the city's boundaries to gradually extend into natural spaces, while natural spaces infiltrate urban spaces from the outside, achieving a bi-directional spatial integration. This framework of natural infiltration and water-land interweaving helps to restore the ecological foundation and urban habitats of Sino-French Peninsula Town.

Through ecological weaving, the project further extends ecological space by introducing diverse plant and animal communities, connecting ponds of varying sizes to form ecological conservation belts, and innovatively transforming the lakeshore into a finger-like shape. Taking into account factors such as habitat surveys, terrain elevation differences, and proximity to urban development areas, and following the principle of minimal cost paths, key wildlife habitat locations and biological migration corridors have been identified on the site. It enhances ecological richness and biodiversity of the urban ecosystem, minimizes the ecological impact of urban regeneration, drives the green development with ecological value, highlights the ecological features of the city, and improves its comprehensive competitive power.

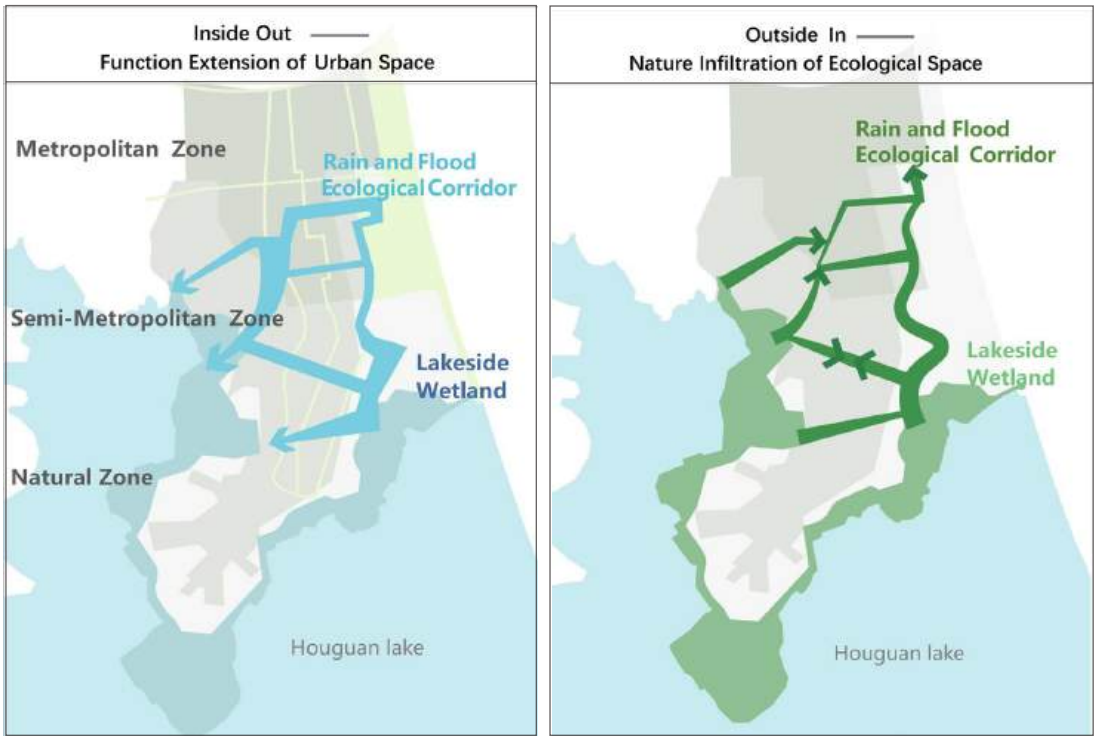

Figure 54: Integration of Urban and Ecological Spaces

3.6.2 Innovative Rain and Flood Management, Building a Natural Water Network System, and Enhancing Urban Resilience

Following the principles of respecting, adapting to, and protecting nature, during the urban regeneration process, the project preserves the spatial pattern of "three sides bound by the lake, surrounding with ponds, and turtle-back extension". It emphasizes the role of the water network as a crucial link between natural watersheds and urban construction, uses a rain and flood model to identify low-lying ponds and ditches for micro-renovation, thereby creating 600,000 cubic meters of wetland storage spaces and 8 kilometers of drainage channels.

The traditional grey pipe drainage network is eliminated in favor of natural topography, where low-lying ponds, stormwater runoff corridors, rivers, and wetlands are connected to form a three-tiered, pipe-free ecological drainage system: sponge at the source, water network in the middle, and wetland at the end. This system, characterized by river channels flanked by islands and wetlands surrounding islands, efficiently manages rainfall in various scenarios, greatly enhancing the regions capacity for water retention and drainage. The flood control standard is raised to a 100-year event, achieving low-cost, high-resilience stormwater management and improving the area's ability to withstand and prevent extreme weather events.

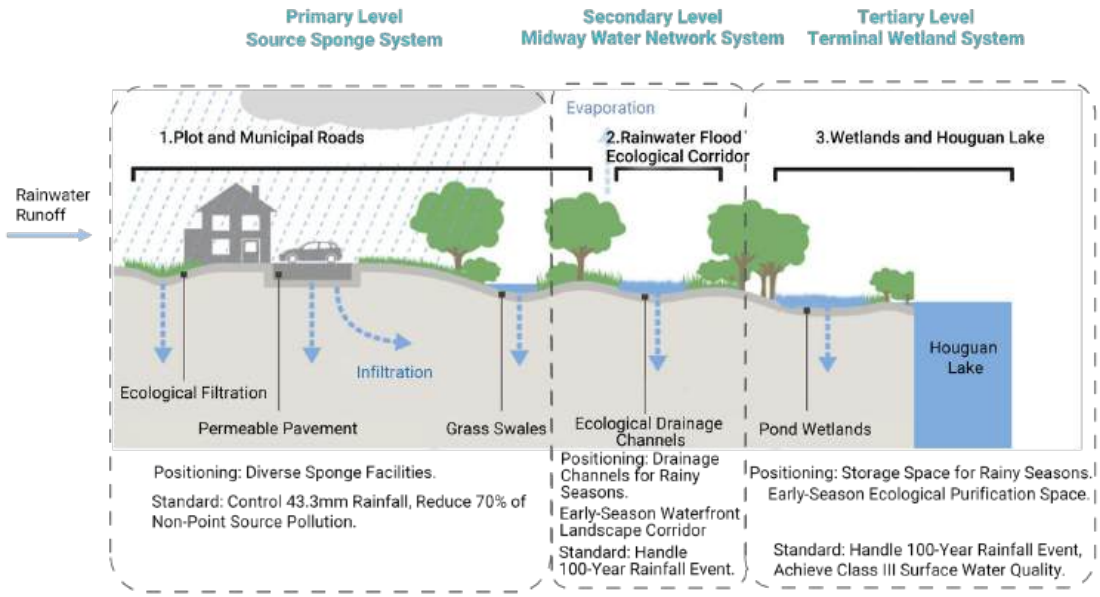

Figure 55: Pipeline-free Ecological Drainage System

3.6.3 Enhancing Process Control, Building Pollution Interception and Purification Barriers, and Achieving Zero Increase in Watershed Pollution

With the goal of achieving "zero increase" in watershed pollution before and after urban regeneration and ensuring that the water quality entering Houguan Lake meets at least the Class III surface water standard, this plan addresses gaps in environmental governance infrastructure. The point source sewage collection system in the region will be improved to enhance the city's capacity for wastewater collection. The Nature-based Solutions (NBS) will be used to build a cascaded pollution interception and purification system, which includes sponge city measures at the source, a mid-way linear water network and an end-stage lakeside ecological conservation belt. The goal is to establish Wuhan's first pollution zero increment town.

By slight terrain adjustments, removal of pond embankments, localized dredging, and the creation of flow channels to connect the ponds, it will form two wetland chains approximately 4 kilometers long on both the east and west sides of the terminal lakeside ecological conservation belt, reducing 70% of non-point source pollution generated on the peninsula. This can enhance the hydrodynamic performance of the water network system, minimize the impact of urban regeneration on water quality in lakeside areas, and improve the lakeside water environment of Sino-French Peninsula Town.

Figure 56: Multi-stage Ecological Pollution Interception and Purification System

Figure 57: Lakeside Wetland Chain Purification Path

Figure 58: Regeneration photos of Lakeside Ecological Conserration Belt in Sino-French Peninsula Town

3.6.4 Sharing Ecological Resources, Creating Multidimensional Waterfront Public Spaces, and Integrating Urban and Ecological Spaces

Leveraging the existing ecological background of outer wetlands gradually infiltrating into the urban core, the project takes the creation of multidimensional waterfront public spaces as a key means of urban regeneration. By sharing ecological resources and landscapes, and following near-natural design principles, the project preserves the meandering shapes of rivers and wetlands, natural shoreline, and local vegetation habitats while meeting drainage requirements. It incorporates features for recreation, sports, outdoor leisure, and water activities, along with cultural elements, creating a water-themed cultural corridor. A three-tier ecological pedestrian pathway system is actively woven together—comprising "main greenway, pedestrian pathway with recreational elements, and main recreational pathway" routes. By developing landscape nodes that offer cultural depth and innovative experiences, a lakeside ecological park is crafted that blends natural waterways, diverse waterfronts, green paths, and cultural landscapes. This demonstrates the fusion of urban spaces, ecological areas, and natural functions, enhancing the vitality of waterfront areas and the city's cultural landscape, and realizing the harmonious coexistence of humans and nature in Sino-French Peninsula Town.

Figure 59: Cross Section of Main Greenway

Figure60: Rendering of Main Greenway

Figure 61: Cross Section of Pedestrian Pathway with Recreational Elements

Figure 62: Rendering of Pedestrian Pathway with Recreational Elements

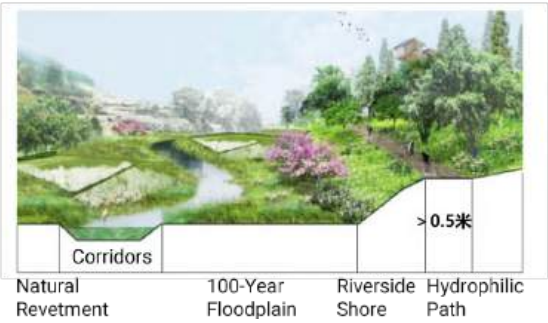

Figure 63: Cross Section of Main Recreational Pathway

Figure 64: Rendering of Main Recreational Pathway

Figure 65: Rendering of Main Greenway

Figure 66: General Layout Plan of Ecological Water Network of Sino-French Peninsula Town

At present, the regeneration has been initiated for the natural water network system and the lakeside ecological conservation belt of Sino-French Peninsula Town. The lakeside ecological conservation project has been completed and selected as a demonstration project during the 14th Meeting of the Conference of the Contracting Parties to the Ramsar Convention on Wetlands in 2022. It has also become a model for ecological protection and environmental enhancement in the Sino-French Wuhan Ecological Demonstration City. Bird populations in the surrounding area have increased by 40%, with sightings of rare species such as black-winged stilts, egrets, moorhens, and Diplazium esculentum (water fern).

The project exemplifies the urban ecological regeneration concepts of sustainable development and ecological restoration. It provides a "Wuhan paradigm" in exploring the building of ecological resilience for new infrastructure to address environmental protection and climate change challenges, with significant ecological demonstration benefits.

Figure 67: Photos of Key Nodes of Lakeside Ecological Conservation Belt

Figure 68: Birds' Habitats in Sino-French Peninsula Town

Figure 69: Waterfront Hiking Trail in Sino-French Peninsula Town

2.7

Qingdao Road Cultural and Artistic Area: Overall Regeneration of Historical Areas from a Multicultural Heritage Preservation Perspective

Category: Cultural revitalization
Keywords: Cultural exhibition, cultural tourism, cultural creativity, accompanied planning, development and operation model

Government-led, Revitalizing the Area through Cultural and Museum Functions
Collaborative Efforts to Lead Comprehensive Area Regeneration through Cultural Tourism and Creative Functions of Pinghe Packing Plant
Market-driven, Three-level Collaboration to Build Baoyuanli as a New Node in the Zhongshan Avenue Cultural Tourism Route

Figure 70: General Protection Layout Plan of Qiangdao Road

Hankou Historical and Cultural Zone is one of Wuhan's most completely preserved areas in terms of modern historical landscape, concentration of historical buildings, and distinct cultural heritage. Qingdao Road is the most culturally and artistically rich functional area within the zone's "six-area linkage". According to the differentiated functional positioning of each area and the principles of urban regeneration, the Qingdao Road Cultural and Artistic Area has undergone refined and phased renovation, and developed a series of highlighted projects of urban regeneration, including Wuhan Art Museum, Pinghe Packing Plant, and Baoyuanli.

The regeneration projects of Wuhan Art Museum, Qingdao Road, and Baoyuanli span nearly 20 years, showcasing the transformation of urban regeneration models in Wuhan's historical and cultural areas across different historical phases. This transformation has progressed from the early government-led investment, construction and operation to a mid-phase model combining government leadership with market participation, and more recently, a market-led, ongoing regeneration model. Activated by a series of catalytic projects, Hankou Historical and Cultural Zone has continually improved its chain of cultural exhibition, cultural tourism, and cultural creativity industry, extended cultural and tourism routes and boosted its economic vitality and urban appeal.

3.7.1 Government-led, Revitalizing the Area through Cultural and Museum Functions

The renovation of Wuhan Art Museum focused on restoring the historical facade and replacing the function of the original buildings. By integrating the structure of both old and new buildings, the project created a contemporary space suitable for museum exhibitions and cultural activities. This approach provided a multifunctional platform for art exhibitions, cultural exchanges, and library collections. The Wuhan Art Museum renovation was completed with RMB 2.2 billion of investment from the municipal government. This investment strengthened Wuhan's cultural atmosphere, providing residents with a vital space for art appreciation and cultural participation, reflecting the city's commitment to preserving and reusing historic buildings, and underscoring a strong sense of cultural confidence and responsibility. As a key node along Zhongshan Avenue, the project also involved a redesign of the South Plaza during its 2014 renovation, adding art installations, and creating an open, fluid pedestrian space and expansive landscape views.

Figure 71: Bird's View of Wuhan Art Museum

3.7.2 Collaborative Efforts to Lead Comprehensive Area Regeneration through Cultural Tourism and Creative Functions of Pinghe Packing Plant

The regeneration plan for Qingdao Road is based on a deep exploration of the area's cultural context, focusing on protecting individual historical buildings while also controlling the overall historical character and spatial texture. The planning is informed by preliminary functional planning research, comprehensively considering the functional positioning of the historical cultural district. This approach avoids the decline of the area that can result from a singular protection strategy, and invigorates the district. The renovation of the Pinghe Packing Plant relies on functional planning as a prerequisite. Through the approach of "filling in textures, restoring remnants, integrating areas, and merging functions", this project transforms traditional industrial buildings into modern cultural, creative and consumer spaces. Taking advantage of major infrastructure development (the Yangtze River Tunnel), the project is led by a district-level platform and involves professional park operators responsible for investment promotion and operational maintenance and establishes a complete process chain for the regeneration and transformation of historical buildings.

3.7.3 Market-driven, Three-level Collaboration to Build Baoyuanli as a New Node in the Zhongshan Avenue Cultural Tourism Route

The urban regeneration of Baoyuanli is spearheaded by the Municipal Cultural Tourism Group, collaborating with various stakeholders, including the Jiang'an District government to promote the project. This approach closely integrates land-level planning, secondary development, and tertiary operations. The asset value after the project operation periods (20 years) is positioned as a secondary source of the project's revenue. It aims to achieve an urban regeneration goal characterized by "comprehensive balance, dynamic balance, and long-term balance". By introducing diverse cultural and artistic themes and cultural tourism elements, the project can enrich the area's functionality.

By transforming isolated historical buildings into key nodes along a premium cultural tourism route, with the Wuhan Art Museum (Hankou Branch) positioned as the core of cultural exhibitions, Baoyuanli relies on the artistic industry chain to build an "Art +" industrial ecosystem, increasing the scale of public functions—such as exhibition, commerce, and services—from 30% to 43%.

Figure 72: Baoyuanli Photo

After the regeneration spanning over 20 years, the Qingdao Road section of Zhongshan Avenue has been transformed into Wuhan's most authentic historical and cultural area with the most diverse functions and the most immersive experiences. The renovation of Wuhan Art Museum has made it one of the city's key cultural facilities, being included in the second batch of national key art museums in 2015, with a total number of visitors exceeding one million. It is excessively crowded during weekends and holidays, thus becoming one of Wuhan's most important public cultural and artistic venues. The Pinghe Packing Plant renovation project in Qingdao Road, winning the 2019 UNESCO Asia-Pacific Awards for Cultural Heritage Conservation, opened in 2018 as a flagship project of "Hankou Cultural Creativity Valley". Currently, over 100 companies specialized in digital creativity, industrial design, cultural creativity retail, and art bookstores have settled in the area, and contributed significantly to the surrounding region's development.

The regeneration of Baoyuanli officially launched in February 2024, marked by a series of cultural and artistic activities spanning Little New Year, Spring Festival, and Lantern Festival, which sparked public interest and attention. A batch of influential brands have now moved in, with street-facing shops gradually opening, continuously infusing new vitality into the historical neighborhood and reviving the commercial value of Wuhan's old city.

Figure 73: Bird's View of Pinghe Workshop

04

The Wuhan Initiative of Urban Regeneration

- Practical Experience of Urban Regeneration

INITIATIVES

Guided by the United Nations Sustainable Development Goals (SDGs), Wuhan has fully embraced the new development concepts of the New Urban Agenda (NUA). Drawing on its unique characteristics and practical experience in urban regeneration, the city summarizes and forms the "Wuhan Initiative" from five perspectives to provide valuable insights for advancing urban regeneration efforts in other countries.

URBAN REGENERATION INITIATIVES OF WUHAN

Practical Experience of Urban Regeneration

Laying a Theoretical Basis for Urban Regeneration and Continuously Improving Methods and Systems for Implementation

Encouraging Continuous Innovation in Regeneration Types to Create a More Diverse and Layered New Pattern

Encouraging Comprehensive Coordination Based on the Concept of Organic Regeneration to Achieve Systematic, Integrated, and Gradual Urban Regeneration

An Improved Model of “Co-creation” Regeneration to Facilitate Social Inclusion to Guarantee Fairness and Justice

Encouraging the Application of New Digital Technologies to Innovatively Empower Urban Regeneration in the Digital Era

4.1.1 Laying a Theoretical Basis for Urban Regeneration and Continuously Improving Methods and Systems for Implementation

Urban regeneration is a continuously evolving and multidisciplinary research topic, with its theoretical foundation derived from various fields, including urban planning, urban design, architecture, landscape architecture, urban economics, urban management, and urban sociology. The development trajectory of urban regeneration ideas and theories has shifted from the material determinism-based physical planning towards more humanistic approaches, such as collaborative theory and self-organizing planning, reflecting a fundamental shift in the value system of urban regeneration. In the new era, urban regeneration is becoming more integrated and systematic in terms of understanding, concepts, methods, and technologies, demonstrating trends towards complexity, comprehensiveness, and policy orientation in modern urban regeneration. To effectively address real-world challenges, it is necessary to break through disciplinary boundaries, actively expand and innovate, and transform existing and traditional urban planning theories and methods. This involves strengthening the integration of engineering-focused urban planning with social, humanistic, and administrative disciplines. In-depth research should be conducted on urban development regularities and dynamic mechanisms under the UN SDGs framework, incorporating concepts such as “urban organism”, “organic regeneration”, “new urbanism”, “compact city” and “new urban humanism”, with systematic studies in various areas such as laws and regulations, industrial structure, property rights structure, infrastructure, land use, market operations, and public participation involved in urban regeneration, thereby constructing a foundational theoretical and methodological system for urban regeneration in the new stage of development and enhancing the scientific rationality and social foundation of urban regeneration.

4.1.2 Encouraging Continuous Innovation in Regeneration Types to Create a More Diverse and Layered New Pattern

Viewing the city as a self-organizing organic life system, the types of urban regeneration should be innovated across multiple dimensions. At the macro scale, cities should integrate the high-quality development with the transformation of old and new growth drivers, with a focus on optimizing urban functional structures, upgrading industrial structures, and improving living environments within the overall framework of national land-use planning. At the meso scale, regeneration strategies should be tailored to the specific conditions and maturity levels of different urban functional zones. These include a variety of strategies for renewing old residential communities, redeveloping old industrial bases, revitalizing old city centers, conserving historical areas, transforming urban villages, renovating shantytowns and dilapidated buildings, refurbishing old wharf areas, regenerating industrial parks, revitalizing urban waterfront areas, and upgrading rail transit infrastructure to promote comprehensive district or unit-level regeneration. At the micro scale, more attention should be given to “small-scale” livelihood-oriented projects, and carefully refined local micro-regenerations and micro-upgrades to further address community-level needs and problems closely related to residents’ daily lives. This approach aims to drive the overall improvement of urban functions and quality in specific areas and even at the city level.

4.1.3 Encouraging Comprehensive Coordination Based on the Concept of Organic Regeneration to Achieve Systematic, Integrated, and Gradual Urban Regeneration

The entire process of urban development is an organic regeneration process with a continuous cycle of renewal and transformation. Urban regeneration, whether driven through self-regulation or external forces, is an intrinsic mechanism within urban growth, encompassing multiple aspects of urban development. This complexity makes urban regeneration a sophisticated social systems engineering. Just for this reason, urban regeneration should not be viewed solely as a physical or functional construction activity, but it should be considered more of a regulatory mechanism for continuously calibrating urban structure and functions, enhancing overall urban functionalities, and enabling the city to adapt to future development needs and meet people's demands for a better life. A holistic, systematic, and sustained approach to regeneration coordination is required to ensure alignment between urban regeneration and economic, social, and cultural development. On one hand, systematic and gradual overall planning should address the relationship between "partial and whole" and "short-term and long-term" regeneration, define city-wide urban regeneration goals and tasks, propose overall strategies, and guide the orderly advancement of regeneration efforts across the city to avoid blind and disordered renovations. On the other hand, comprehensive coordination is required to facilitate the rational allocation of various regeneration resources, effectively balance "new and old", "above-ground and underground", and "individual benefits versus collective benefits". As a result, the urban regeneration becomes more scientific and sustainable, and a long-term, integrated framework may be built for promoting urban civilization and fostering social harmony.

4.1.4 An Improved Model of "Co-creation" Regeneration to Facilitate Social Inclusion to Guarantee Fairness and Justice

The "co-creation" concept means that the urban regeneration should be able to facilitate social inclusion and guarantee fairness and justice. This approach highlights public participation across different social strata, allowing various social groups to take part in decision-making and implementation. Through co-creation, the viewpoints of all stakeholders, including residents, community organizations, and businesses, are considered, ensuring that regeneration plans align with the interests of most people. It fosters social inclusion by addressing the needs of vulnerable groups and ensures that the benefits of regeneration are distributed equitably, preventing monopolization of resources and interests by only a few individuals or interest groups. This approach can ensure that the regeneration outcomes benefit all residents fairly, reduce social inequality and enhance social harmony and stability. Furthermore, co-creation can strengthen residents' sense of belonging and identity, increase community cohesion, and collectively contribute to creating a better urban environment. This innovative approach can optimize the symbiotic mechanisms and environment, embody social fairness, justice, and democracy, and thus supporting sustainable and inclusive urban development and genuinely improving the quality of life for all.

4.1.5 Encouraging the Application of New Digital Technologies to Innovatively Empower Urban Regeneration in the Digital Era

In the urban regeneration process, leveraging “big data + thick data” as a foundation allows for the effective application of digital technologies, such as urban digital simulation laboratories, virtual reality (VR) and Building Information Modeling (BIM), to regeneration projects. Big data analysis can provide scientific support for urban regeneration planning by accurately identifying the city’s population distribution, traffic flow, and land use patterns. Geographic Information Systems (GIS) can enable the visualization of urban spatial management, and aid planners in designing and organizing urban functions more effectively. Moreover, VR and Augmented Reality (AR) technologies allow residents to experience the envisioned urban environments directly, and enhance public engagement. The integration of smart sensors and Internet of Things (IoT) technologies can facilitate real-time monitoring of urban infrastructure, enabling timely problem detection and resolution. The BIM technology offers a refined approach to managing the construction process, thus reducing waste and costs. The use of new digital technologies can provide more efficient, precise, and intelligent solutions for urban regeneration, and infuse it with powerful new vitality for the future.

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WUHAN PLANNING & DESIGN INSTITUTE

2024 EXPLORATION AND PRACTICE OF URBAN REGENERATION IN WUHAN — GENERAL REPORT

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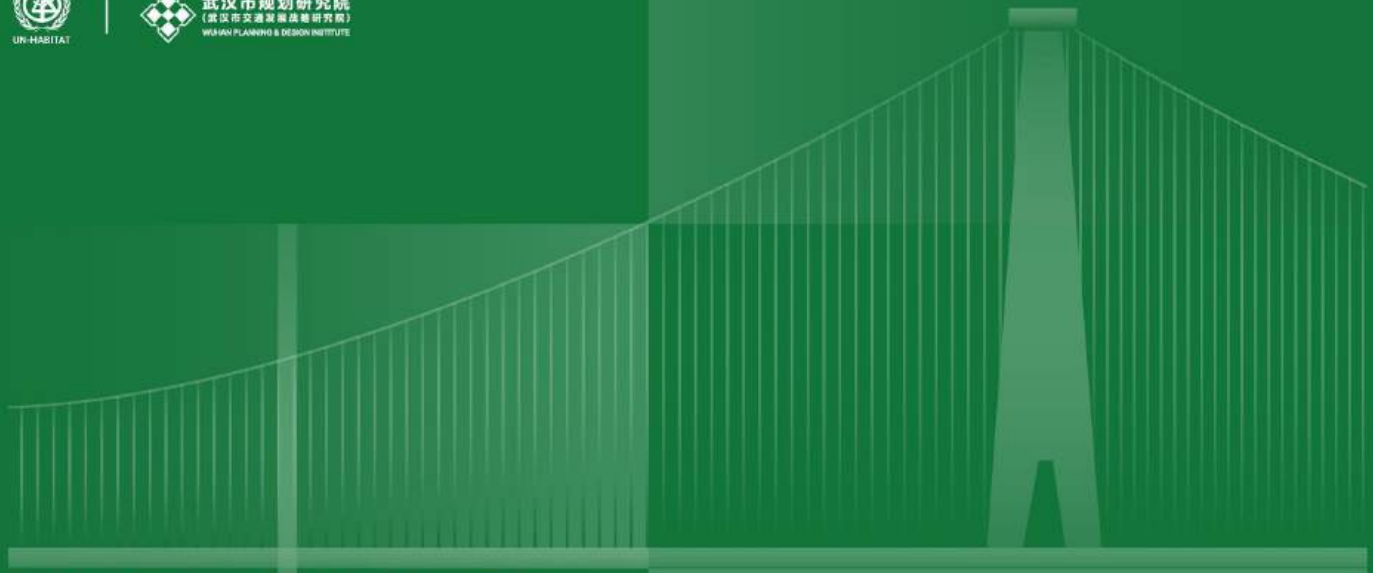

EXPLORATION AND PRACTICE OF URBAN REGENERATION IN WUHAN

— WUHAN PRACTICES

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2024

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EXPLORATION AND PRACTICE OF URBAN REGENERATION IN WUHAN - WUHAN PRACTICES

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ACKNOWLEDGEMENTS

Principal Authors: Wuhan Planning and Design Institute (Wuhan Transportation Development Strategy Research Institute)
Contributor: UN-Habitat China Office
Source of data and images: In addition to the sources contained in the references, all information and pictures come from Wuhan Planning and Research Institute (Wuhan Transportation Development Strategy Research Institute) responsible for the project

EXPLORATION AND PRACTICE OF URBAN REGENERATION IN WUHAN

— WUHAN PRACTICES

2024

PREFACE

This research report aims to present a comprehensive review of the practical experience made by Wuhan in the field of urban regeneration and make an in-depth analysis of successful cases and the underlying key factors in an effort to offer useful insights and reference for future urban regeneration in Wuhan and other cities.

This report selects the urban regeneration cases of Wuhan according to the following principles:

Contemporaneity: The cases can fully reflect the contemporaneity of urban regeneration in Wuhan based on global development trends and value orientations in terms of theoretical basis, technological methods, and implementation pathways.

Distinctiveness: The cases can fully demonstrate Wuhan' s unique features as a national central city, a megacity, a historical and cultural city, a city of lakes and mountains, an industrial base, a transportation hub, and a city of universities. Through the presentation of these cases, readers can gain a better understanding and appreciation of Wuhan' s distinctive urban characteristics.

Demonstration: The selected cases should be representative of urban regeneration projects implemented as of 2010, with effective outcomes, significant social influence and good value for demonstration and promotion, interpreting the "Wuhan Experience" in urban regeneration.

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01

Livelihood Improvement of Residential Community
—Jiangxinyuan Community

02

Economic and Industrial Revitalization
—Sustainable and Progressive
Urban Regeneration
of Hanzheng Street

03

Regeneration and Redevelopment
of Old Industrial Parks from the Perspective
of Industrial Revitalization
— Wugang Yungu 606

Case Distribution :

Six cases of urban regeneration in Wuhan under the following categories are selected in this report:

Livelihood Improvement of Residential Community

The Jiangxinyuan Community Regeneration Project was selected under this category. Jiangxinyuan, in the vicinity of Moshui Lake in Hanyang District, built in 2007 with 2,016 households living in buildings of six to seven stories, carries an intangible cultural heritage park. The project can exemplify Wuhan's new model of community governance based on collaboration, participation and shared benefits, which is realized by means of constructing an all-age friendly residential quarter.

Economic and Industrial Revitalization

The Hanzheng Street and the Wugang Yungu 606 Park Regeneration Projects were selected under this category.

Hanzheng Street at the confluence of two rivers is the origin of Hankou and a symbol of Wuhan spirit. Ever known as the "Most Prosperous Place on the State of Chu" and the "First Street of China", the street is regenerated by embracing a gradual and sustainable development concept, reflecting Wuhan's deep affections to its roots and aspirations for growth.

The Wugang Yungu 606 Park, located in the north of Hongshan District near Wuhan Railway Station, was transformed from an old industrial base built in 1954 into an popular attractive innovation park and tourist destination. Through the thorough heritage conservation and renovation, it manifests Wuhan's mission and commitment to revitalizing its industrial legacy.

Public Space Enhancement

The East Lake Dali Village Regeneration Project was selected under this category. Surrounded by the Plum Garden, Cherry Blossom Garden and Botanical Garden on the eastern shore of East Lake, Dali Village adopts a "small-scale renovation" approach. Led by the government, guided by the village, with the participation of villagers, it has earned the title of "First Village of Cultural and Creative Industries on the Land of Chu", and demonstrates Wuhan's path of developing the "Village amid Scenic Area" against its pattern of "Great Rivers and Lakes".

Ecological and Environmental Protection, Municipal Infrastructure

The Sino-French Peninsula Town Infrastructure Regeneration Project was selected under this category. The project, located on the northern shore of Houguan Lake, encircled by lakes on three sides, is abundant in native flora and fauna. The goals of regeneration include addressing wastewater discharge issues in the area, diversifying the urban landscape, enhancing urban resilience through the approach of “natural infiltration and ecological sharing” so as to reflect Wuhan’s capabilities and determination of coexisting harmoniously and flourishing along with green mountains and clear waters.

Historical and Cultural Preservation

The Qingdao Road Cultural and Artistic Area Regeneration Project was selected under this category. Qingdao Road within Hankou Historical and Cultural Zone is one of the areas with the most well-preserved and densely distributed historical heritage in Wuhan. By applying an approach of “mending the gaps in the texture, restoring relics, integrating areas, and consolidating functions”, the project revives the essence of “five foreign concessions and ten miles of glamour”, showcasing Wuhan’s resolute efforts in protecting and utilizing the historical and cultural heritage in conjunction with the exploring innovative practices.

Figure 1: Distribution Diagram of Urban Regeneration Cases

Jiangxinyuan Community

01

REGENERATION

The Jiangxinyuan Community Urban Regeneration Project is typical of multi-stakeholder collaboration and public participation. It promotes the transformation of environment and the enhancement of governance through the joint efforts of the government, design institutes, universities, community organizations, and the residents. The project' s main objective is to actively guide residents to participate in planning and decision-making, ensuring that their voices can be heard and their needs can be satisfied to foster a sense of belonging and satisfaction, laying a foundation for community development. The innovation in fundraising is reflected in a diversified financing strategy, which combines government support, social capital, self-financing by residents, and special-purpose bonds to provide stable funding for the community transformation, balance interests of all stakeholders, and mitigate risks. The long-term operational mechanism is constructed by setting maintenance standards, organizing maintenance activities, and formulating a supervision and feedback system to ensure that public spaces and facilities are continuously maintained. It can also foster residents' self-management and service capabilities, and improve the efficiency of community governance. Ultimately, this urban regeneration project boosts inclusive growth and social equity, enhances the living environment of residents, provides public services and employment opportunities, strengthens communication and integration among social groups, and contributes positively to building a harmonious society.


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1.1

Background of Community Regeneration

Jiangxinyuan Community Regeneration
Community Regeneration Goals

1.1.1 Jiangxinyuan Community Regeneration

Jiangxinyuan Community, located on the eastern shore of Moshui Lake in Hanyang District, Wuhan, is a typical old community within the recreational area surrounding the lake. With urbanization advancing, native villagers living on fishing in the district were relocated to this community, making it one of the first "village transitioning to modern community" in Wuhan. The community covers a total area of 170,000 square meters, with 41 residential buildings, 2,016 households, and a total population of 6,587. Centered around a diverse fishing tradition, the community has developed a unique local culture known as the "Dragon Dance" culture and is home to China's first AAA-level[1] intangible cultural heritage park. It has also built a national protection and demonstration base of intangible cultural heritage production line, featuring 54 key intangible cultural heritage projects at the national, provincial, and municipal levels. Years of habitation has changed Sanlipu Road and Jiangxinyuan Road into the most vibrant neighborhoods in Hanyang District. The Jiangxinyuan Community Regeneration Project, launched in 2023, targets at solving common issues in old communities, such as an aging residential environment, insufficient public services, and weak community cohesion. As a key urban regeneration project in Hanyang District, it adheres to the principles of low cost, high quality, and refined management to conduct a small range of renovations and regenerations tailored to the community characteristics, with an aim to preserve the community's regional cultural context, revitalize community dynamics, and improve the human settlement and quality of life. The project is carried out from four dimensions: beautification of public spaces, establishment of community-governed platforms, inheritance and promotion of intangible cultural heritage, and long-term services of planners.

Figure 2: Geographic Location Map of Jiangxinyuan Community (upper left) and Updated Bird's Eye View of Jiangxinyuan Community (lower right)

China's scenic areas can be divided into 5 levels from AAAAA, AAAA, AAA, AA and A. AAAAA is a normative and standardized quality rating system and the highest level of honor of the tourism scenic spots in China. To become the 5A-scenic area, one should pass 12 inspection items such as transportation, tourism safety and capability..[1]

1.1.2 Community Regeneration Goals

According to the survey data, residents of Jiangxinyuan Community have expressed a strong desire for an improvement of the community environment and their quality of life, particularly the upgrading of landscapes within the neighborhood, the enhancement of streetscapes along the main roads, and the increase in parking spaces. The residents' demands for expanding facilities related to intangible cultural heritages mirror their attention to and expectation for the preservation of traditional cultures. They hope to strengthen the cultural characteristics and attractiveness of the community through the promotion of intangible cultural heritages. Moreover, the addition of elderly dining halls and community-based medical facilities is directly related to residents' daily convenience and healthy life, and significantly enhances their quality of life and sense of well-being. These demands collectively demonstrate an expectation for all-around progress in community functionality, service upgrades and cultural development. Therefore, the main objective of this regeneration project is to create a community that is friendly to intangible cultural heritage practitioners, volunteers, children, and the elderly.

Figure 3: Rendering of Moshui Lake Recreational Area

1.2

Community Regeneration Strategies

Complex Project Organization Structure
In-depth Public Participation Model
Positive Space Enhancement Strategy
An Effective Long-term Operational Mechanism

1.2.1 Complex Project Organization Structure

During the course of advancing community regeneration, it is crucial to build a collaborative framework involving the government, professional teams, and community organizations. Such framework integrates experts from various fields including urban planners, engineers, community leaders, and policy analysts, to ensure that the project can receive professional guidance from multiple perspectives. Meanwhile, by encouraging residents to participate in organizing these activities, the project allows them to directly involve in the supervision and decision-making to meet their needs.

Furthermore, to achieve the high-quality target-oriented renovation at a low cost, the project needs to apply a diversified funding model that combines resources from government funds, social capital, and residents' contributions. This funding model can not only mitigate risks and improve the efficiency of capital utilization, but also enhance community participation and governance vitality, supporting the community's long-term sustainable development and ensuring a substantial lift in the residents' quality of life.

1.2.2 In-depth Public-participation Model

The insights of residents are essential for carrying out regeneration of aged communities. For this reason, the project team needs to organize public participated activities, promptly disclose information to residents and collect feedbacks to ensure that they are informed of and involved in the project. Activities are held on both micro and macro levels to effectively convey residents' voices. The project team also collects residents' ideas through various channels, such as seminars, questionnaires, and workshops, to facilitate active involvement of residents for jointly creating a community regeneration project that integrates history and modernity.

1.2.3 Positive Space Enhancement Strategy

The project aims to blend traditional culture with modern life through innovative planning and design to make community spaces an extension of residents' daily lives as well as platforms for cultural inheritance. On one hand, it can enable residents to naturally interact with traditional culture in their lives and strengthen cultural identity and community cohesion by improving the physical environment, such as upgrading infrastructure and expanding public spaces, and fostering a cultural atmosphere through the use of abundant intangible cultural heritage resources. On the other hand, residents' participation is encouraged to ensure that the spatial planning can meet actual demands, while emphasis is being put on multifunctionality and flexibility of the space to accommodate diverse use requirements, thereby enhancing the efficiency of space utilization and resident satisfaction. The goal is to create a vibrant, modern, and dynamic community space connotated with profound cultural meanings.

1.2.4 An Effective Long-term Operational Mechanism

Establishing an effective long-term operational mechanism is critical for the long-term benefits of community regeneration. Academic and professional institutions can play a pivotal role in this process by providing necessary expertise and technical support, ensuring that the regeneration project takes an overall account of long-term needs during planning and implementation. By participating in all phases of the project through meetings, workshops, and various local activities, with the assistance of professionals, community residents will have the opportunity to continuously participate in the regeneration process and establish an effective management system. This helps to enhance their self-management and service capabilities, and enable the coordinated and sustainable social, economic, and environmental development.

1.3

Implementation Path

Strategy One: From Lakeside Park to Community Micro-space: Creating an All-Age-Friendly Living Environment to Illuminate the Old Community
Strategy Two: Building a Collaborative Community-governed Platform by Taking Public Space Landscape Enhancement as a Starting Point
Strategy Three: Leveraging Cultural Cohesion to Highlight the Value of Intangible Cultural Heritage Through “Small Investment + Fine Craftsmanship”
Strategy Four: Continuously Advancing “Planners Entering the Community” to Provide Long-term Professional Technical Services for Community Micro-regeneration

1.3.1 Strategy One: From Lakeside Park to Community Micro-space: Creating an All-age-friendly Living Environment to Illuminate the Old Community

Leveraging the Area's Landscape Resources to Enhance Public Access to Waterfront Green Spaces

Moshui Lake, located at the geographic center of Hanyang District, sits between the old town of Hanyang and the new town of Sixin Area. It has been developed into a central urban park of Hanyang District, becoming one of the largest lake parks in Wuhan's central urban area. At present, the eastern shore, where Jiangxinyuan Community is located, is the only part of Moshui Lake Lakeside Park that remains undeveloped. Although the community is adjacent to Moshui Lake, residents find it challenging to access the superior natural environment of the area.

This project begins by focusing on a broader region, connecting green spaces of the city. It specifically targets the transformation of the lakeside blue-green space in the district where the community is located, proposing the development of a distinctive park that combines wetland plant observation, science education, and research. The design creates three landscape corridors leading to the lakeshore, and through a rich and continuous expanse of open green spaces, establish an accessible, interconnected lakeside greenway for public use. This results in a lakeside public space with distinctive cultural character and vitality, providing residents of lakeside communities with high-quality green spaces directly accessible from their doorsteps.

Figure 4: Regeneration Details of Jiangxinyuan

Focusing on Public Micro-spaces and Utilizing Vacant Spaces to Create an All-age-friendly Community Environment

Within the community, planners from Huazhong Agricultural University, leveraging their expertise in landscape horticulture, have utilized idle community spaces to design the landscape environment under the concept of "creating an all-age-friendly community environment". They have proposed a detailed public space enhancement plan. Specifically, the plan includes the establishment of cultural and science education areas to make innovative use of the corridor layout. The design incorporates a structural framework of "Dragon Dance" culture to support a central landscape axis, blending elements of Hanyang embroidery, fishing nets, and modern colorful mosaics. This not only enhances the educational value of the space but also fosters a deeper connection to the community's intangible cultural heritage. The design also fully considers the needs of surrounding residents for recreational activities, and plans spaces for parent-child interaction and communication. It employs a design concept combining solid and void spaces to create a diverse range of interactive facilities and activities, thus invigorating the district. Furthermore, the plan envisions a fishing culture experience area that integrates elements such as "fish bones", "fishing nets" and "boats", providing visitors with an immersive, interactive experience that deepens their understanding and appreciation of local culture. In addition, a horticultural bonsai co-creation area is established to encourage residents' participation in community landscaping and gardening. By planting and maintaining greenery, residents not only enrich the community's landscape but also strengthen their sense of belonging and fulfillment.

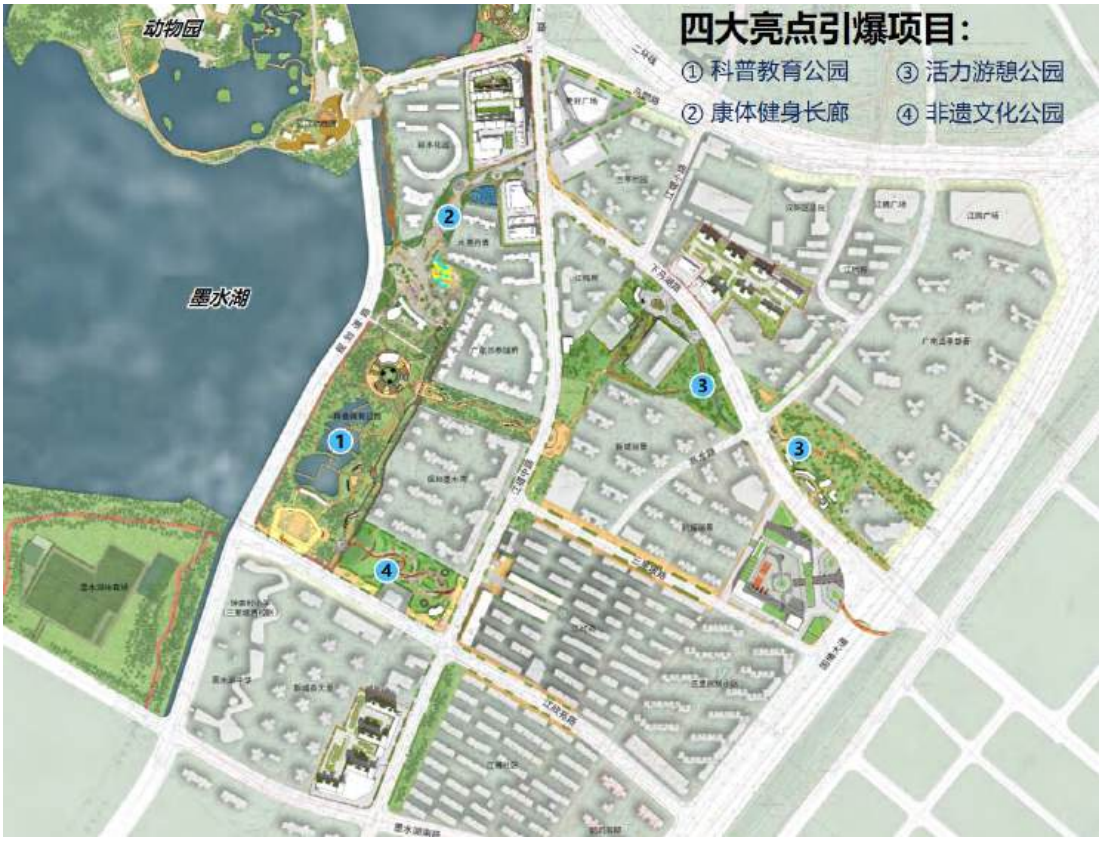

Figure 5: General Layout Plan of the Waterfront Public Space of Moshui Lake Recreational Area

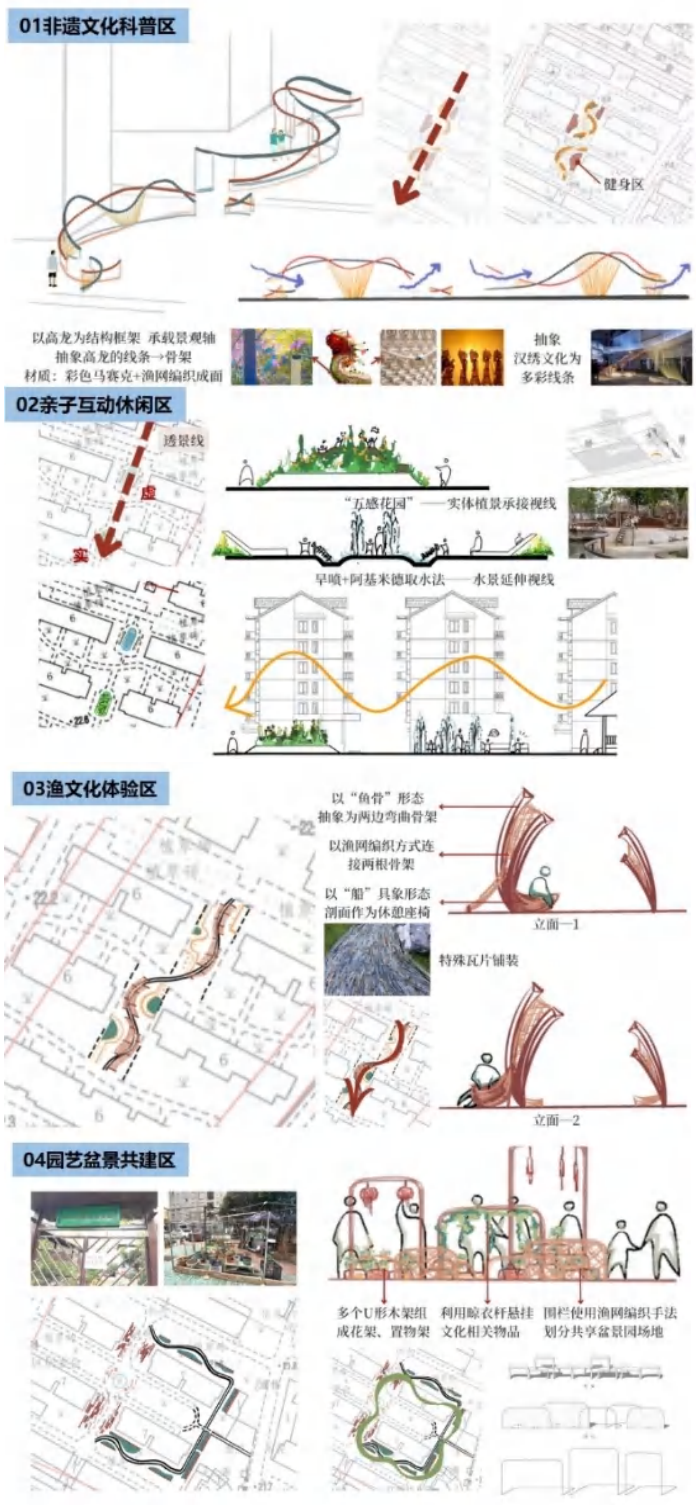

Figure 6: Concept Design of the Public Space and Landscape Improvement of Jiangxinyuan Community

1.3.2 Strategy Two: Building a Collaborative Community-governed Platform by Taking Public Space Landscape Enhancement as a Starting Point

Multi-stakeholder Planning and Multi-perspective Promoting Project Development

The project team has established the Jiangxinyuan Planning Workshop in the eastern public space of Moshui Lake. This collaborative platform brings together the government, professional planners, universities, independent experts, and community residents. The workshop's establishment signifies a shift towards an opener and more inclusive approach to community planning, moving away from the traditional elite-led design paradigm. Planners are no longer confined to the office-based design; instead, they conduct field surveys on residents' living conditions and needs, and have face-to-face discussions to understand their fundamental perceptions and expectations for the community environment. Experts from universities, planning enthusiasts, and local residents are invited to participate in plan-making. This hybrid collaboration provides new perspectives and creativity to community planning. The regeneration plan is designed in conjunction with courses at Huazhong Agricultural University, providing students with practical learning opportunities while making the workshops planning solutions more realistic and innovative.

Figure 7: Jingxinyuan Community Workshops, Government Mobilization Meeting & Field Visits

After the preliminary work, the final design is not decided by only a few experts; rather, the Planning Bureau, planners, the community and residents collectively discuss and select the plan that best meets public needs and receives widespread recognition. This approach can promote a co-creation and shared governance mechanism, and create an all-age-friendly community environment. It ensures that the project can truly reflect residents' will and needs. The project involves residents throughout the process, allowing them to participate in discussions, offer suggestions, and assist in the construction. Consequently, the "three-planner linkage" involving professional planners, resident planners, and social planners collaboratively shape the community can be accomplished, realizing multi-stakeholder involvement incorporating conceptual design to drafting drawings and garden renovation.

Figure 8: Workshop on the Public Space Renovation of Jiangxinyuan Community

Securing Multiple Fundingraising Sources to Facilitate Project Implementation

The funding sources of the project are not limited to those appropriated from the Planning Bureau. Instead, it involves extensive social resource mobilization, including funds raised from residents, sponsorships from enterprises and institutions, research funding from universities (primarily Huazhong Agricultural University), and support from alumni associations. The diversity of funding sources can not only aid in the project's long-term operation and development, but also attract the attention of various stakeholders, encourage their active participation and inputs, thus facilitating the project's efficient execution. The hybrid funding structure can achieve a balance of "low cost and high quality" in the spatial transformation process.

Co-management and Sharing After the Implementation

Through the operation of the workshop, Jiangxinyuan Community establishes a sharing platform for collaborative governance and joint management. Residents are not only beneficiaries of the planning process but also active participants and decision-makers. This model significantly enhances their sense of involvement and belonging. The establishment of the workshop is not a one-time activity but a continuous process, through which residents are allowed to engage in all stages of community planning, including implementation, supervision, evaluation, and subsequent operation.

The renovated public gardens are collectively owned by the community, with different parts assigned to various resident groups, who are responsible for their daily maintenance. This zonal management approach can not only improve the efficiency of garden upkeep but also strengthen interactions among residents and foster community cohesion. Furthermore, the community plans to hold regular activities such as the "Most Beautiful Garden" competitions, gardening exchanges, community vegetable gardens, tree-planting events, and environmental lectures. These activities aim to enrich the recreational life of the community, promote residents' interaction and learning, and collectively create a more beautiful and harmonious living environment. These measures can effectively lift residents' sense of happiness and satisfaction, becoming a highlight of the community's sustainable development.

Figure 9: Residents' Participation in Landscaping of Jiangxinyuan Community

Figure 10: Dragon Dance Performance of Jiangxinyuan Community

1.3.3 Strategy Three: Leveraging Cultural Cohesion to Highlight the Value of Intangible Cultural Heritage Through “Small Investment + Fine Craftsmanship”

To effectively expand the influence of the intangible cultural heritage (“ICH”) brand, relying on Jiangxinyuan Park as a carrier of public spaces, the project team skillfully employed multi-dimensional cultural empowerment strategies to extend cultural projects to the eastern shore of Moshui Lake. This resulted in the creation of Wuhan’s first cultural park incorporating ICH elements.

The close collaboration among the government, the community, and residents is emphasized, and a co-creation model of “government guidance, community cooperation, and residents’ participation” takes shape. This approach not only facilitated the effective integration of policy resources but also stimulated the community’s cultural creativity and participation, laying a solid foundation for the preservation and development of intangible cultural heritage. Secondly, based on the existing natural environment and infrastructure of Jiangxinyuan Park, a refined renovation strategy was implemented to maximize social and environmental benefits with minimal investment. The design included the creation of a micro-topographic park using elevation differences, the installation of the iconic “Dragon Dance” sculpture as the centerpiece of cultural plaza, and the construction of Red Bridge Corridor linking the Wetland Science Park, Moshui Lake Observation Tower, and the ICH Cultural Plaza. They enriched the cultural content of the park, improved the spatial connectivity, provided visitors with an immersive interactive experience, and achieved the efficient use of resources and the profound dissemination of culture.

On the other hand, the project made a full use of the extensive reach and immediacy of online promotion and share contents related to the intangible cultural heritage themes of Jiangxinyuan Park through social media platforms with modern information technologies. It also invited heritage craftsmen to regularly host activities, such as traditional handicraft workshops and heritage skill performances. These resulted in deeper cultural connections and unique visual effects, maintained the parks vitality and appeal, and gradually developed a distinctive intangible cultural heritage feature for the park. Finally, it became a dynamic community cultural park that integrated cultural heritage preservation, community interaction and ecological education.

Figure 11: Concept Design of Jingxinyuan Intangible Cultural Heritage Park

1.3.4 Strategy Four: Continuously Advancing "Planners Entering the Community" to Provide Long-term Professional Technical Services for Community Micro-regeneration

The planner team, comprising members with backgrounds in planning, architecture, and landscape design, including university faculty and students, design professionals, and planning managers, participated throughout all stages of the project from research and technical consultation to space renovation, activity organization, and community maintenance, to ensure the smooth progress of the project. Serving as a bridge among the government, design units and residents, the planners effectively communicated over the needs of all parties, and facilitated the successful implementation.

Figure 12: Multi-stakeholder Participation in the Co-creation

By widely soliciting feedback from residents of the community, and relying on Jiangxinyuan Community's rich marketplace culture and foundation of intangible cultural heritage, Hanyang Branch of Wuhan Bureau of Natural Resources and Planning led the collaboration along with Huazhong Agricultural University's Landscape Architecture Department, Jiangxinyuan Community, Wuhan Jiangrenfang Landscape Co., Ltd., and other parties. Together, a series of community-based renovation activities, such as planting flash mobs and upcycling old objects were successfully organized, which encouraged residents to participate in the planning and construction of gardens, and embodied the concept of "My Garden, My Choice". Residents were guided to co-create, co-manage, and share a beautiful home environment. In addition, activities like flea markets, traditional cultural fairs, natural science dissemination lectures, workshops, and other participatory cultural events were planned to promote the evolution of the community's public spaces in a more dynamic and engaging manner. The launch of these activities aroused widespread attention and positive responses from the public. Community residents, volunteers, and professionals, among others, enthusiastically took part in the planning, construction and maintenance of gardens. Planners immersed themselves in the community, lived and worked alongside residents to fully understand their needs and expectations, thus ensuring that the design solutions were both professional and closely aligned with residents' daily lives. Throughout the process, these professionals not only contributed planning assistance but also offered comprehensive technical support to residents, so as to ensure the long-term, stable, and sustainable operation of community regeneration projects.

Figure 13: Photograph of Planners, Residents and Volunteers in the Co-created Garden

1.4

Summary

At present, the green spaces among residential units 105, 106 and 107 in Jiangxinyuan Community are undergoing renovation, with a design area of over 7,000 square meters. Through nearly two years of active exploration, from November 2022 to present, the community has established a cooperation model involving “government + university + community + enterprise + residents”, which can provide a positive collaboration paradigm of low-cost, high-quality, and refined community regeneration.

As the urban regeneration project advances, we expect to see a more inclusive and equitable urban environment where every resident can enjoy the benefits of urban development. Through meticulous planning, involvement of multi-stakeholders and continuous community involvement, the Jiangxinyuan Community Urban Regeneration Project not only aims to improve living conditions and public facilities, but also seeks to enhance social integration and strengthen community cohesion. By maximizing the collaborative roles of the government, the society, and residents in community governance, the project aspires to establish a sound governance structure based on “co-construction, co-governance, and shared benefits”. Through government leadership, multi-stakeholder collaboration, and innovative participation methods that mobilize residents’ engagement, this project endeavors to realize community regeneration with sustainable benefits that offers long-term advantages for future growth.

Figure 14: Public Space Enhancement Details in Jiangxinyuan Community Before and After the Renovation

Sustainable and Progressive Urban Regeneration of Hanzheng Street

02

REGENERATION

Hanzheng Street, born at the confluence of the Yangtze River and the Han River, lies at the heart of Wuhan' s "two rivers and four banks". It has always been considered as the city center in the heart of Wuhan' s local residents and serves as a window for others to get acquainted with and know about Wuhan. During the Ming and Qing Dynasties, Hanzheng Street leveraged its river accessibility to thrive as the "Most Prosperous Place on the Land of Chu", and lift Hankou Town among China' s four great towns. Its commercial legacy has spanned over 500 years. Since the reform and opening-up of China, Hanzheng Street, with its pioneering spirit, took the lead in the country to open a wholesale market of daily commodities, becoming a "weathervane" and "testing ground" for the reform and opening-up, thus earning the title of "First Street of China". Today, many of the wholesale markets that once took the lead in the country are still bustling. As the city undergoes transformation, Hanzheng Street' s lingering challenges have become more apparent. In a period of upward regeneration, sustainable and progressive urban revitalization is anticipated to strengthen and restore its reputation.


024

2.1

Background of Urban Regeneration of the Hanzheng Street Area

History of Development and Regeneration of Hanzheng Street
Challenges in the New Round of Urban Regeneration of Hanzheng Street

Figure 15: Geographic Location Map and Photo of Today's Hanzheng Street

The regeneration area of Hanzheng Street is a commercial hub since ancient times, covering an area of approximately 4.7 square kilometers, with a population of 202,000 today.

2.1.1 History of Development and Regeneration of Hanzheng Street

The urban space of Hanzheng Street originated from Jijiazui, gradually expanding westward and northward with the booming production and trade. Over a history of 500 years, Hanzheng Street's spatial evolution and urban regeneration have never ceased, which can be roughly divided into the following stages:

Figure 16: Historical Changes of Hanzheng Street (From left to right: the Late Qing Dynasty Period, the 1980s, around 2000, and prospect for 2035)

The first stage, before the reform and opening-up, was a phase of agglomeration when Hanzheng Street began to take shape

In the mid-Ming Dynasty, the Hanzheng Street downtown market was formed due to the diversion of the Han River, attracting merchants who took advantage of the convenient water transportation. This was a groundbreaking period. In the late Ming and early Qing period, Hanzheng Street had already gathered various trading groups, led by the Eight Great Guilds[2], presenting a bustling scene of "sails and masts lining up along the street, and ten-thousand lights glowing through the night". Merchants, for the convenience of commercial trade and life, gradually undertook spontaneous and incremental improvements to the urban environment, while the populace started modifying their living spaces, giving rise to the traditional form of "shop-front, residence-back" and "street-level businesses, upper-floor residences" in Hanzheng Street. After the port was opened up to the world, influenced by the Western urban management practices, the area began to experience the initial stage of ordered self-governance led by officials, merchants and citizens.

The second stage, after the reform and opening-up, was the transformation phase, when the area's regeneration faced a need for systemic restructuring

Hanzheng Street, as a trailblazer, transformed into the "First Street of China" for petty commodities trade. However, the influx of people and goods posed a significant strain on urban infrastructure, severely compressed street spaces and overwhelmed infrastructure facilities, causing traffic congestion and numerous social conflicts. Consequently, during the nationwide "Three-old Renovation[3]" movement, Hanzheng Street was included in the plans, initiating some progressive demolition and redevelopment in units of small land parcels within the area, and gradually reconstructing its spatial characteristics and traditional cultural fabric.

The third stage, from the turn of the new millennium onward, was a reform phase, when compounded issues triggered new demands for regeneration

While conflicts from the agglomeration remained unresolved, new problems began to emerge from the redevelopment. With the growing awareness of historical and cultural preservation, the area faced increasing challenges such as the decrease of historical relics and fragmentation of historical and cultural continuity. Meanwhile, as other petty commodity markets flourished across the country and the Internet reshaped traditional retailed industry, the city entered an era of optimization of available resources with the demolition-dominated regeneration confronting bottlenecks. Today's Hanzheng Street, confronting the dilemma of "inheritance" versus "development", began to enlarge its vision and seeking internationally for urban regeneration solutions suited to the new millennium.

[2] Since the Qing Dynasty, businessmen have divided relevant commercial business activities into eight categories which were called the Eight Great Guilds, namely, salt guild, tea guild, medicinal materials guild, Guangfu grocery guild, oil guild, grain guild, cotton guild, and cowhide guild.

[3] It refers to the renovation of old factories, old warehouses, and old residential buildings in the city within a certain historical period to improve the appearance, lift the taste, and increase the comprehensive functions of the city.

2.1.2 Challenges in the New Round of Urban Regeneration of Hanzheng Street

The first challenge is how to achieve sustainable prosperity amid the hybrid current industrial landscape

As the birthplace and home of the Wuhan-style women's garment industry, Hanzheng Street has a well-developed clothing sector, which is an iconic and advantageous industry, with a substantial volume and good productivity. However, in terms of sustainable development, the industry exhibits characteristics such as a mixture of wholesale and retail, low-quality supporting facilities, an incomplete industrial structure, and a lack of upstream and downstream design. How to upgrade and transform this traditional advantageous industry is a crucial topic for the area's industrial regeneration.

The second challenge is how to enhance the urban image amid a blend of different spatial elements

Hanzheng Street displays a mix of old and new, ancient and modern, high and low profiles, with its historical fishbone-patterned streets and alleys, markets rebuilt in the 1990s, and commercial streets developed in recent years. This evolution has resulted in diverse urban textures, forming a patchwork cityscape where the old and new coexist. Towards the future, the challenge lies in how to transform this spatial diversity into an appealing urban environment through regeneration.

Figure 17: Current Hanzheng Street Mixing New with Old

The third challenge is how to foster harmony and coexistence among diverse groups of people

Hanzheng Street has been a melting pot historically, where merchants, peddlers, scholars, officials, and commoners lived together, creating a unique local feature and street culture. Today, it continues to accommodate different groups of people, including business operators, traders, workers, consumers, administrators, and tourists. Meeting their needs, retaining them, and creating comfortable spaces where all can thrive are key issues for the street's revitalization.

The fourth challenge is how to implement co-governance and shared benefits amid a complex social structure

The population of Hanzheng Street is diverse, consisting of residents (native inhabitants and tenants), businessmen (storeowners, employees, and platform operators), and authorities (district government, subdistrict offices, and communities), who form three distinct forces. How to unite these forces and jointly move toward a better future remains a big challenge.

Figure18: Today's Hanzheng Street

2.1.3 Overall Planning Vision

As a place bearing Wuhan's historical memory, Hanzheng Street carries the formidable task of preserving its heritage while renewing prominence. Situated at the core of Wuhan's "two rivers and four banks", it also bears the historical missions of leading development and benchmarking for the future. To this end, the regeneration of Hanzheng Street shall focus on two ends: exploring how to transform and renew this historic urban area and how to best plan its core geographic location for future growth. The area needs to adopt a "Double-T" development strategy, integrating trading services (Trading) and cultural tourism (Tourism) to build an international commercial hub and a central business service core in central China. It also aims to create a dynamic, competitive, and sustainable display area that showcases the city's world-class image and functionality by concentrating the most important public and commercial facilities.

The overall structure is planned as "One Core, One Axis, and Two Wings". Here, "One Core" refers to the commercial hub at the confluence of two rivers, targeted at attracting commercial services and multinational headquarters to form a world-class core area. "One Axis" is a central green corridor of the herringbone shape. "Two Wings" consist of an eastern wing focusing on business services and culture and a western wing focusing on commerce and cultural tourism.

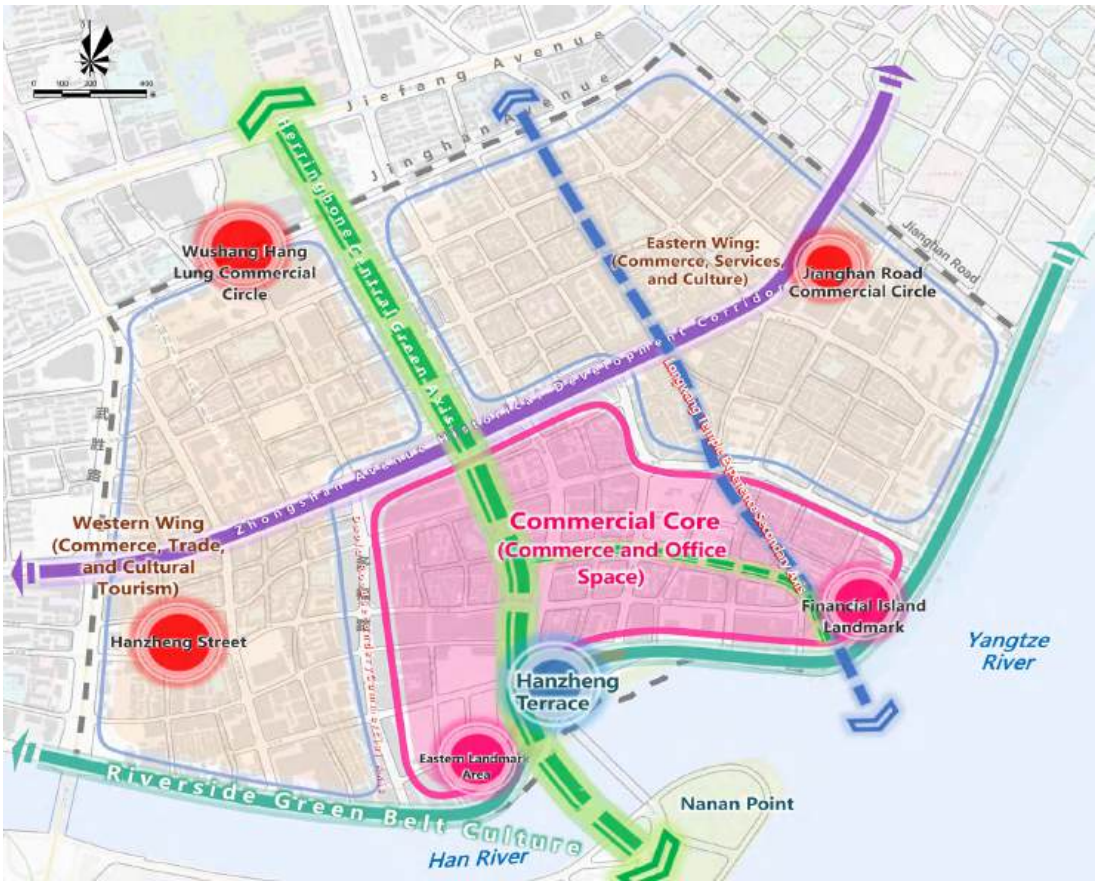

Figure 19: Overall Layout Plan

2.2

Core Concepts of Urban Regeneration of the Hanzheng Street Area

Industrial Enhancement Dimension—Promoting Sustainable Prosperity
Spatial Optimization Dimension—Building a Quality City
People-oriented Dimension—For the Well-Being of Various Groups of People
Social Governance Dimension—Uniting Multiple Forces

To comprehensively explore a suitable urban regeneration path, Hanzheng Street followed the requirements of the United Nations' Sustainable Development Goals and New Urban Agenda. With people-centered and smart growth as the guiding core values, the area integrated its century-old tradition into the gradual urban regeneration process and discovered a sustainable and progressive approach of urban regeneration.

Compared with traditional urban regeneration methods, sustainable and progressive regeneration prioritizes a gradual progress while protecting urban culture, ecological environment, and social structures. This approach not only pays attention to short-term physical restructuring but also gives priority to long-term social, economic, and environmental benefits. Through a step-by-step process, the city can achieve modernization and sustainable development while maintaining its original texture and unique characters. Sustainable and progressive regeneration highlights the need for multi-stakeholder participation and balanced interests, and encourages the government, enterprises, community residents, and other stakeholders to be involved in the entire urban regeneration process. By virtue of joint consultations, every step in the regeneration process can be aligned with the sustainable development principles.

2.2.1 Industrial Enhancement Dimension—Promoting Sustainable Prosperity

Industrial regeneration, at the core of urban regeneration, serves as the primary driving force for the sustainable urban regeneration of old downtown areas. Given Hanzheng Street's development positioning, traditional industries and unique resources, growing the real economy stronger, bigger and better is the primary goal for industrial regeneration. This involves upgrading and transforming traditional industries to enhance their value chains and integrate digitalization, networking and intelligent technologies while developing new industries, new business patterns and new models to boost the growth of the new quality productive forces[4].

It is crucial to guide the upgrading of traditional industries, which form the base of a modern industrial system and play a critical role. Technological advancements, innovation in business models, and enhancement of transformation and upgrading must be utilized to stimulate the internal driving force of traditional industries, address their shortcomings, and establish a parallel development model where upstream, midstream, and downstream industries can coexist, collaborate, and share resources.

New quality productive forces are driven by the deepening application of new technologies and characterized by the rapid emergence of new industries, new business formats and new models, thereby building a new type of social production relations and social institutional system productivity.[4]

New industries, new business patterns and new models are fostered. The area's cultural heritage is to be explored deeply to fortify the industrial core, and provide an innovation platform and service support for new industries, business patterns and models. It aims to combine culture and technology, leverage technological advances to enhance the area's accommodation capacity and attractiveness, and increase the industrial output.

2.2.2 Spatial Optimization Dimension—Building a Quality City

The urban regeneration is tasked with making the city better. Through comprehensive optimization of urban spaces, more efficient, higher-quality, and more sustainable urban development can be achieved. Different spatial contexts are addressed through tailored regeneration approaches.

For historical spaces, preserving heritage sites is the priority, with regeneration efforts radiating outward from key nodes. By accelerating the construction of prominent historical landmarks and central axes, the area's cultural identity is highlighted, enabling the city to develop while maintaining its unique cultural identity. This approach not only preserves the city's historical memory but also infuses public spaces with cultural connotations, making it a vital link between the past and the future.

For industrial spaces, a strategy of progressive regeneration is applied to expand capacity and enhance quality. To cater for the needs of industrial transformation and upgrading and workforce requirements, this strategy reasonably divides production and living spaces, guide compact layouts, upgrade infrastructure and supporting facilities, highlight ecological environment and landscape development, and create green, ecological and livable industrial communities.

For key functional spaces, an integrated regeneration approach is employed to attract talents. Combining the development goals and positioning of functional spaces, scientific and reasonable zoning has been considered, with moderate functional integration to enhance the area's vibrancy. The city also plans to establish a convenient and accessible transportation system, a comprehensive network of public service and infrastructure facilities, and a distinctive landscape environment to attract talent to the area.

2.2.3 People-oriented Dimension—For the Well-Being of Various Groups of People

Being "people-oriented" is a fundamental principle of urban regeneration. Enhancing the quality of life of residents and fulfilling people's aspirations for a better life are the primary tasks of urban regeneration. The process gives priority to the needs of local residents, the working population, and newly attracted talents, ensuring that the regeneration can guarantee their living and working spaces respectively.

To improve the life quality of native residents

Priorities are given to upgrading outdated municipal infrastructure in old residential communities to meet residents' basic safety and living needs, improving environment and supporting facilities, implementing energy-saving building renovations to meet residents' demands for more convenient and better living conditions, increasing public service facilities and incorporating intelligent upgrades to enrich community services and improve the life quality of residents.

To secure a peaceful and happy life for the working population

Urban regeneration encourages the participation of multi-stakeholders, guides a transition from the traditional real estate development model to the construction and operation of rental housing, drives enterprises and institutions to construct rental housing on currently available resources such as idle industrial buildings and office spaces, and regulates the lease of personal housing. The rental model of shared ownership housing is also explored as a management mechanism for the lease of such housing.

To attract and retain talents

High-quality residential housing is provided to achieve the transition from "accessible housing" to "livable housing". It is aimed to deliver residences that are of superior quality, safe and durable, with optimized functionality, health and comfort, while being aesthetically pleasing, convenient, low-carbon, energy-efficient and environmentally friendly. These houses feature well-developed infrastructures, advanced technology, refined services, and harmonious neighborhoods.

2.2.4 Social Governance Dimension—Uniting Multiple Forces

Social governance is a key factor in realizing a smooth transition from old neighborhoods to new communities during the urban regeneration process. The effective social governance can not only ensure the orderly progress of regeneration efforts but also enhance the community cohesion and residents' sense of belonging, allowing for the organic integration of old and new communities from the cultural, economic and social levels. This dimension aims to shift from the traditional neighborhood management to a collaborative model of co-governance and co-development in new communities.

To improve organizational structures

Co-creation is not just a construction model, but an advanced social governance concept that emphasizes the participation of all stakeholders. It turns urban development and community governance into a process of collective collaboration, and enhances the sense of participation and belonging among all parties involved through joint construction and shared benefits.

To complete organizational chains and networks

Urban development and community governance is a process of collective collaboration. By absorbing various forces in the joint construction and shared benefits, urban regeneration aims to heighten the sense of participation and belonging of all stakeholders, and achieve an organic integration of old and new communities at the cultural, economic and social levels. This shift will facilitate a transition from the traditional old neighborhood management to a collaborative co-governance model for new communities.

2.3

Core Features of Sustainable and Progressive Regeneration of the Hanzheng Street Area

Concentrating on Three Complementary Industries for Sustainable Industrial Ecosystem Development

Focusing on Three Types of Spaces to Implement Targeted Strategies for Comprehensive Enhancement of Spatial Quality

Serving Three Groups of People, Providing Needs-based Support, and Promoting a Diverse and Inclusive Living Environment

Integrating Three Forces, Refining the Structure, and Promoting Implementation

Taking into account the challenges faced by Hanzheng Street and guided by advanced concepts of international urban regeneration, the progressive iterative regeneration process of Hanzheng Street has achieved significant outcomes in the areas of industry, space, population and governance.

2.3.1 Concentrating on Three Complementary Industries for Sustainable Industrial Ecosystem Development

As the original wholesale trade industry faces bottlenecks, Hanzheng Street leverages its three distinct advantages: the historical commercial heritage of Hankou, the traditional garment industry, and its core location in the city, to develop three core industries that are complementary with each other. This aims to drive the transformation and upgrading of the industrial ecosystem in Hanzheng Street, and facilitate the sustainable growth of the street on the basis of industrial prosperity.

Revitalizing the 500-year Historical Commercial Heritage to Develop the Cultural Tourism Industry

Bolstered by Hanzheng Street's 500-year commercial heritage of "Old Hankou", the theme "Walking Old Streets, Hearing Old Stories, Tasting Old Flavors" links various historical and cultural resources such as historical streets, cultural relics, and intangible cultural heritage. The design plans to connect traditional blocks and landmarks like Xin'an Jiuru and Baoshan Hongyan along the historical Zhongshan Avenue. Employing a progressive "dot-like" small-scale regeneration strategy, the street aims to quickly establish a unique regional identity IP with minimal investment over a short period, attract visitors and create a self-growing hotspot and engine. Then, by utilizing event marketing and creating sensation, the street may continue to attract visitors and customers, accumulate "traffic", and draw in more cultural and creative brands. The goals are to gradually form a cluster of cultural buildings and brands, foster a distinctive feature of cultural experience spaces, promote iteration of business patterns and push up rental prices in the street. New industries such as urban leisure, culture and arts are cultivated along Zhongshan Avenue, while tourism, art exhibitions, cultural creativity experiences, and tourist accommodations are expanded in Xin'an Jiuru. The revitalization of the cultural tourism industry complements the local garment trade, turning Hanzheng Street into a cultural tourism landmark known for shopping, dining, entertainment, and accommodations.

Enhancing the Ready-to-Wear Strength Through Industrial Upgrading and Expansion to Prolong the Chain and Strengthen the Garment Sector

As the cradle of Wuhan-style fashion, Hanzheng Street was once renowned nationwide for its women's clothing. Until now, this remains its largest and most dynamic industrial sector. However, it is less popular than before due to competitions from emerging brands of women's clothing across the country. But considering its mass production and deep-rooted traditions, there is still a great potential for future growth through transformation and upgrading. In the future, Hanzheng Street will develop "beauty textile, beauty clothes and beauty stores", push forward industrial transformation and grow strong the garment sector. Efforts are devoted to the transformation in three key areas: first, focusing on the development of Yunshang to boost existing core business patterns in original design, digital and smart processing, and garment retail; second, expanding and strengthening the value chain by promoting e-commerce, brand showcasing, custom tailoring, and live-streaming along Duofu Road and in Jinzhenmao; and third, fostering cross-industry connections by introducing shops with time-honored brands, artisan studios in central malls of Hanzheng Street, and deploying new forms of business such as garment sale, hands-on experience and home furniture experience. Trendy flagship stores and creative fashion workshops of "bicolor weaving" in Xin'an Jiuru are also developed, combining "fashion and cultural tourism" to rejuvenate the garment industry.

Concentrating Functions and Promoting Modern Service Industries at the Confluence of Two Rivers

Situated at the confluence of two rivers, Hanzheng Street is naturally positioned as a "geographic core", "commercial center", and "functional hub", thus becoming the natural cradle for a central business district according to the general rule of urban development. Guided by the functional positioning of Hanzheng Street in the Overall National Land Planning, it intends to attract modern service industries to Fosun Bund Center and surrounding areas, and taking advantages of existing commercial retail and garment wholesale sectors. Bearing in mind the needs for transformation and upgrading of high-quality life consumption of the garment wholesale industry. It can also extend business patterns such as digital and smart commerce, intelligent life, lodging and dining, and housekeeping services, while enlarging the effective supply of productive and life services. Consequently, an industrial cluster of modern commercial services integrating commerce and industry to support textile and garment, cultural tourism, and residential housing.

Industrial Regeneration Practice: Revitalization and Transformation of Xin'an Jiuru Traditional Commercial Area

Lying in the heart of Hanzheng Street, Xin'an Jiuru features Wuhan's longest bluestone road and preserves the distinctive fishbone-patterned street texture of Hanzheng Street. The area is home to multiple historical sites, such as Xin'an Academy and the former site of the Red Cross Society. Today, it mainly hosts small-scale garment-related industries, such as clothing pattern-making workshops, with outdated and dilapidated facilities.

The revitalization of Xin'an Jiuru is implemented in phases according to the stages of industrial upgrading. In the short term, the focus is put on transforming the traditional garment industry. This involves repurposing featured dot-like buildings without changing the basic structure, such as Bicolor Weaving, and infusing trend-setting brands and fashion creativity workshops. By innovating business models and transforming production methods, traditional industry is elevated to a higher level. Moreover, the area leverages historical streets and lanes, such as Yaobang First Lane, Xin'an Street, and Jiuru Lane, along with landmarks like Xin'an Academy, to create a cultural tourist pathway incorporating old and new elements. This design fosters a "cultural tourist landmark" driven by consumption and supported by industry. In the long term, the surrounding garment industries are planned to be embraced. Through the use of "mushroom-like buildings" like Bicolor Weaving, Xin'an Academy, and the site of Hankou Red Cross Society, the area will serve as a window for showcasing the garment culture. Further, tourism resources are developed to transform the area into a cultural tourist destination characterized by fashion-led experiences, profound historical roots, and a blend of old and new elements.

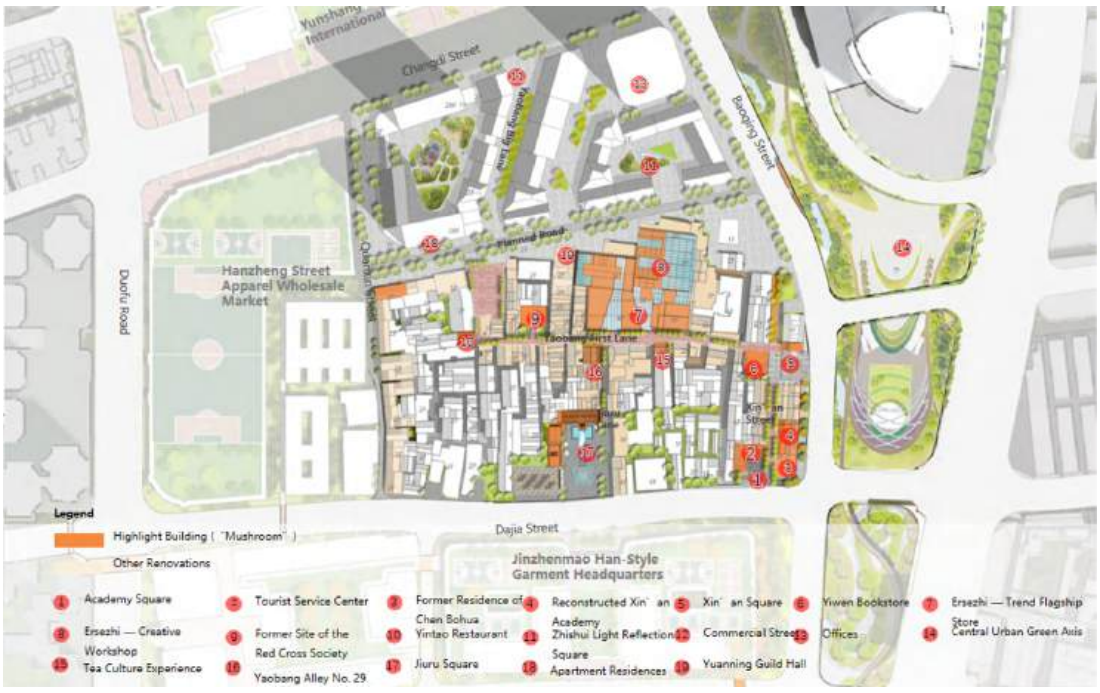

Figure 20: Regeneration Concept Image of Xin'an Jiuru Area

2.3.2 Focusing on Three Types of Spaces to Implement Targeted Strategies for Comprehensive Enhancement of Spatial Quality

Over the 500-year history, despite all the ups and downs, Hanzheng Street retains its traditional "fishbone" street texture, grand historical relics, multi-storied residential buildings to accommodate industrial workforce, wholesale markets retreated from roads into buildings, as well as high-rise buildings constructed in recent years. These can form hybrid architecture and mixed streetscape with distinctive urban characters. For urban areas of different formats, Hanzheng Street implements targeted strategies to guide the spatial regeneration.

Preserving Traditional Layout and Promoting Small-scale Renovation of Historical and Cultural Spaces to Highlight the Area's Cultural Characteristics

By implementing the multi-level and multi-angle strategies to revitalize historical heritage, considering the characteristics of Hanzheng Street, a "point-line-plane" strategy is employed to systematically preserve and revitalize historical spaces.

To comprehensively protect historical spaces

Historical resources are coordinated for the purposes of protecting and enhancing historical features across the street. New functions, such as the Wuhan-style cultural experiences, distinctive accommodations, and Chinese-chic retail are selectively introduced targeting the functional needs and resource characteristics of the four key areas with concentrated cultural resources: Hanzheng Street, Xin'an Jiuru, Qingfen Mozhiqiao, and Yongkangli. Open spaces and landmark nodes are constructed, and unique tourist destinations are created where historical aesthetics can be reinterpreted in a modern context.

To establish a network of distinctive historical axes

Zhongshan Avenue and 27 traditional historical streets surrounded are renovated and reused. By linking the various historical and cultural resources of Hanzheng Street through spatial continuity and cultural themes, it aims to enhance the cultural experience and integrate the historical features into a unified display and comprehensive utilization.

To revitalize and use historical resources

Individual representative historical buildings or tourist sites are given new vitality through restoration and functional renovation. 65 historical buildings of diverse forms are retained within the area of Hanzheng Street, to preserve historical and cultural imprints, retain and restore buildings and iconic landscapes with historical value to ensure that historical elements are properly preserved during urban development.

Figure 21: Blocks with Historical Styles of Hanzheng Street

Figure 22：Concept Image of Historical Spaces

Optimizing Industrial Spaces Through Progressive Renovation of Market Spaces to Enhance Industrial Development Environment

With 59 markets of various types, Hanzheng Street's commercial space emerged during the "Renovations of Old City, Old Factory and Old Village" in the 1990s that was transformed from street-front shops into indoor spaces. Although these markets form the backbone of local commercial industry, they fall short of the industry's further development needs and have negatively affected local residents' quality of life to some extent. To address the issue of industrial spaces, the plan proposes to, under the guidance of building an community for industry, gradually improve support facilities through progressive regeneration and renovation, optimize spatial environment for the industry, achieve the integrated structure of urban-industrial development, and optimize the industrial development environment of Hanzheng Street.

To delineate industrial communities and enhance the supply of service facilities

Ten communities for industry are built along Duofu Road and Hanzheng Street, focusing on 40 markets with the "commercial space under the residential space" pattern. The "high and low street" spatial system on and above the ground specific to Hanzheng Street is utilized to separate and specifically allocate production and living facilities while achieving the integration of industry and urban life within the district through the featured spatial structure of high-and-low street. The upper levels of markets, currently idle, are transformed into "high-street" pedestrian corridors for leisure walking, with public amenities at upper levels of podiums linked, and deficiencies in cultural and sports facilities filled up to supplement the community construction, thus providing better living spaces for residents higher up. At the same time, the "low-street" pedestrian network is improved, with 22 market service facilities increased, including investment promotion centers, information centers, and consultation centers, to enhance market-related service functions and cater to the needs for industrial upgrades by the market.

To enhance the community for industry by renovation, through a progressive regeneration approach of "one policy for one building"

Considering the types of goods and business needs of low-street markets, renovations are tailored to market spaces to improve display areas and storage spaces, ameliorate cargo transportation, ordering and tourism routes, upgrade customer service experience and optimize internal and external environment of these markets. Finally, the new collaborative urban-industrial integration spaces can be linked with each other.

Creating Distinctive Spaces and Innovatively Promoting High-quality Urban Space Development to Enhance the Area's Central Role

Emphasizing key nodes like the planned herringbone-shaped green axis, the Terrace at Hanzheng Street, and the City Image Display Window, the development plan incorporates selective demolition and renovation to reserve necessary development spaces for the introduction of core urban functions and the creation of distinctive urban characters.

The herringbone-shaped green axis, a historical pathway starting at Terrace at Hanzheng Street and extending to Zhongshan Avenue, is built. By means of demolition and renovation, the project pushes forward the regenerative renovation of themed open spaces such as trendy fashion bases, cultural and commercial tourist cores, City Image Display Window, "breathing waterfront city terrace", Eight-Great-Guilds Memorial Park, and Runway Park, to create the largest cultural green lung in the city center and form the central landscape axis for Hanzheng Street.

Leveraging unique waterfront resources at the confluence of two rivers, Terrace at Hanzheng Street features a spatially continuous, multi-layered, and eco-friendly slow walking pathway along the waterfront, and blends nature with urban spaces. The eastward-expanding zone and revitalized land lots can enhance the functionality of ground-floor spaces in waterfront buildings, create a highly public and open riverside city interface, bring vibrant public spaces to life, and showcase the distinctive waterfront urban landscape of Hanzheng Street.

A "World-class City Image Display Window" is developed along the Yangtze River, incorporating the Bund Fosun Center and iconic waterfront buildings in the financial district. This area is designed to serve high-end commercial and residential functions, set a benchmark for international trade dialogue, produce a prominent architectural landmark, and reinforce the distinctive urban image of Wuhan's core area along shorelines of the two rivers.

Spatial Regeneration Practice: Waterfront Space Regeneration of Terrace at Hanzheng Street

Located at the southern end of the herringbone-shaped green axis of Hanzheng Street, Terrace at Hanzheng Street covers 7.7 hectares, bordering Yanhe Avenue to the south and Hanzheng Street in the north. As an important urban node where two rivers meet, this area is being redeveloped to bolster up the "Hundred-Mile Ecological Corridor on the Yangtze River" initiative, contributing to the goal of making the river more ecological and culturally enriched. The transformation aims to create a dynamic urban public oasis for cultural and artistic expression, a cultural oasis on the left bank of the Yangtze River, and a creative gem of Hanzheng commercial and trading scenes.

Figure 23: Terrace at Hanzheng Street and the Surrounding Scenic Spots

The waterfront space renovation of the Terrace at Hanzheng Streetis embodied as follows: First, the existing land for traffic stations, green parks, and roads is transformed into an urban park through ecological restoration, which creates an urban waterfront gateway at the confluence of two rivers, so that water, shoreline, city, and people coexist harmoniously. Second, gray spaces is revitalized to create multi-layered landscape that integrates sceneries, activities, experiences and urban functions, and enriches the spatial experience. Third, land conservation is emphasized, with the addition of compounded bus terminals and the reserved underground space to elevate the traffic conditions at Qingchuan Bridge and enhance facilities.

Figure 24: Regeneration Sketch Map of the Terrace at Hanzheng Street

2.3.3 Serving Three Groups, Providing On-demand guarantee, and Creating a Diverse and Inclusive Living Environment

The prosperity of Hanzheng Street is attributed to generations of hardworking local population. As the houses of native residents have become aged, and the workforces and new talents are still in search of suitable accommodations, different measures are taken to meet their diverse needs in order to ensure that all groups are properly cared and they can thrive together.

Improving the Living Conditions of Native Residents and Eliminating Shortcomings in Old Neighborhoods

Most native residents of Hanzheng Street live in traditional residential communities built in the late 1990s or even earlier, where the aged infrastructure and adverse environment have negatively affected their quality of life. Hence, tailored housing renovation is implemented in areas concentrated with native residents, including Baoshan Hongyan Block, Rendong New Village Block, Hanzheng Street redevelopment area, and Xiaoxinli Cultural Theme Block. The design plan coincides with the renovation of old residential communities and precisely caters for residents' needs. After conducting surveys on the specific conditions of each community, regeneration and renovation standards are set under basic, enhanced and elevated categories, with targeted renovation of houses, improvement of living environment and addition of service facilities. These standards guarantee that the regeneration meets personalized needs of different groups, actively promote the perfection of communities and construct living spaces that are convenient, smart, diverse and inclusive.

Guaranteeing Affordable Living Environments for Workforces and Innovating the Construction Supply of Rental Housing

With building communities for industry as the focus, to address local employees' needs for neighboring, comfortable, and affordable housing, the supply of rental housing units is increased through various innovative approaches. First, the change from traditional commodity housing development-and-sale model to a combined sale-and-lease model is encouraged, guiding areas such as Chubao, Qingfen, Yuejin, and Yangtze Food Factory to provide housing units for rental. Second, state-owned enterprises like Qiaofang Group are encouraged to participate in the construction and operation of rented housing units through construction, acquisitions, or renovations. Third, social participation is also advocated, particularly for the "upper-level residence" portion of markets undergoing redevelopment, where social capitals are allowed to found housing rental companies and rental housing funds are set up for these social forces to be engaged in rental housing construction and management. House owners are also permitted to list vacant properties for sale on a unified rental platform. Moreover, the government sets high standards for the renovation and construction of rented housing, ensuring that local employees can access comfortable, safe, and high-quality living conditions under the premises of keeping prices affordable.

Accommodating Future Demand for Talents and Advancing Construction of Future Residential Communities

To cater to the needs of modern service industries, pilot future residential communities are developed with key functional spaces in line with the principles of integration into urban life, people-oriented design, joint development and shared benefits. The planning, design and construction of these communities are guided by concepts of sustainability, including green buildings, renewable energy, and resource recycling. Smart systems are incorporated, such as smart home systems, intelligent community services, and intelligent transportation systems. The community culture is further enriched and a variety of housing types are designed to meet the needs of different home structures and lifestyles. Shared living spaces are developed to facilitate interaction and communication among residents, with comprehensive and diversified community amenities that focus on people-centered design and smart management. Therefore, communities become livable for people of all ages, with a friendly residing environment, of services, and policies aligned with the urban fabric, functioning as a dream home for attracted talents.

Regeneration Practice of Residential Environment: Renovation of Baoshan Hongyan Traditional Residential Area

Baoshan Hongyan is one of the traditional neighborhoods in Hanzheng Street, intersected by the old Changdi Street. Most buildings here were constructed before the reform and opening-up, primarily being 3-4-storied residential buildings. The narrow, cramp streets and lanes are interconnected, but the structures and facilities are severely dilapidated, without adequate amenities.

The Baoshan Hongyan area is redeveloped by the following means. First, a comprehensive upgrade of municipal public facilities is a must, with a focus on removing tangled overhead wires, upgrading utility pipe networks, adding street lightings, and improving sanitation to enhance the basic living conditions. Second, street space enhancements is to be carried out, particularly in Changdi Street, Hongyan Fourth Lane and Chuangxin Lane, by adding service facilities and public spaces to improve the living conditions. Third, commercial improvements is made available along Changdi Street by selecting well-preserved "dot-like buildings" to be in line with Hanzheng Street's intangible cultural heritage resources, and introducing specialty dining, cultural exhibitions and experiences to create jobs and raise local living standards. Fourth, the elderly- and child-friendly renovation strategies are applied to the street and lane system, adding more seats for the elderly and recreation facilities for children in the four pocket parks. Through these measures, Baoshan Hongyan is transformed into a livable neighborhood mirroring the diversified urban lifestyles.

Figure 25: Concept Image of Regeneration of Baoshan Hongyan Block

2.3.4 Integrating Three Separate Forces, Refining the Framework, and Promoting the Implementation

Hanzheng Street has historically been a melting pot with a multiple population structure and mixed demographics, posing a lasting headache on social governance. The regeneration project focuses on these three groups: residents (mainly native inhabitants and tenants), business practitioners (primarily storeowners, employees, and platform operators), and administrators (mainly district government, subdistricts, and community organizations). By strengthening platform- construction and providing network services, the area's comprehensive social governance capabilities can be comprehensively improved.

Constructing a Multi-governance Organizational Structure

Multi-governance platforms are established under the concept of joint creation with the participation of residents, business practitioners, and administrators. Three multi-governance platforms are formed at the street level in the area of Hanzheng Street, integrating the forces of administrators, businesses, and residents to achieve sustainable and inclusive regeneration through multi-stakeholder collaboration. Administrators mainly strengthen functions such as policy making, regenerative resource integration, and community governance; in combination with the progress of the relocation and requisition of some buildings and the hardware renewal of infrastructure, a foundation is laid for the regeneration. Business practitioners, taking advantage of their financial, technological, and human resources, participate actively in planning and implementing regeneration projects, and enhance property values in the market. Residents participate in community governance by joining the co-governance committees, put forward their concerns and suggestions, and actively engage in and oversee the implementation of community affairs. Through powerful organization, the leadership in aspects such as development, service, and governance is enhanced, activating the driving force and vitality of neighborhood development.

Creating a Comprehensive Organizational Network

A community governance coalition is established to bring together the resources of market entities, functional departments, co-constructing units, and entrepreneurs for joint operation and management, talent cultivation, venue utilization, event organization, decision-making, and community safety. This approach can lead to a community governance pattern of regional coordination, joint construction and sharing. The following measures are taken, namely strengthening collaboration and communication among departments, industries, commercial chambers, communities, and markets, formulating rules for consultation and decision-making, facilitating project co-construction, information sharing and resource integration, aligning community resources and catering for residents' demands to foster sustainable and inclusive regeneration through multi-stakeholder collaboration.

Regeneration Practice of Social Governance: Three-stakeholder Co-governance in the Old Hanzheng Street

The Old Hanzheng Street block extends from Wusheng Road in the west to Youyi South Road in the east, forming a neighborhood typical of “long streets and short alleys” and “fishbone-shape” streetscape . During the renovation of the Old Hanzheng Street block, a model of co-governance involving the government, commercial tenants and enterprises is adopted, covering approximately one kilometer of the street and 236,800 square meters of surrounding mixed-use buildings. A three-stakeholder consultation platform is established to facilitate the collaboration among the government, merchants and enterprises through a dozen of field surveys and discussions, with feedbacks on the renovation plan collected from merchants, enterprises, residents and consumers.

Figure 26: Basic Information Questionnaire

Figure 27: Diagram of Consumer Questionnaire Analysi

Figure 28:Photos of Field Survey

Wugang Yungu 606

03

REGENERATION

2.1

Wuhan's Industrial Development Process

The Origin Stage of Industrialization in the Period of National Capitalism
The Early Stage of Industrialization in the Planned Economy Period
The Intermediate Stage of Industrialization in the Market Economy Period

The development of modern and contemporary industry in Wuhan has gone through three major stages. The city has experienced more than a hundred years of development from a strategically key industrial town to one of the important heavy industry bases in China, thereby laying a good industrial foundation and leaving abundant industrial heritages.

3.1.1 The Origin Stage of Industrialization in the Period of National Capitalism

Relying on the water transportation advantage of the Yangtze River and the Han River, the modern industry of Wuhan began to sprout in the 1860s. In the wake of 1861, a foreign concession area was set up along the Yangtze River in Hankou, and a number of docks, warehouses and small-scale processing plants flourished in the neighborhood. Since 1889, Zhang Zhidong, the Governor-general of Huguang in the Qing Dynasty, launched businesses in Wuhan. He realized the leapfrog development of Wuhan's commerce-operated industry, made Wuhan as an important industrial city in China and the second largest industrial city after Shanghai.

3.1.2 The Early Stage of Industrialization in the Planned Economy Period

During the first Five-Year Plan period after the founding of the People's Republic of China, the central government invested in Wuhan and set up a series of industrial enterprises, including Wuhan Iron and Steel (Group) Company, Wuhan Heavy Duty Machine Tool Group Corporation, Wuchang Shipbuilding Industry Group Co., Ltd., Wuhan Boiler Co., Ltd., etc. As of1957, Wuhan has become one of the important heavy industry bases in China, with Wuhan Metallurgical Equipment Manufacturing Plant (Wugang Yungu) built at this historical stage. The national key construction projects in the first Five-Year Plan period further drove the local industrial development during the second Five-Year Plan period, such as heavy industries like metallurgy, machinery, etc. and light industries like light textile, electronics, etc. By 1986, By 1986, Wuhan City's industrial scale ranked fourth in the country immediately following the three major municipalities directly under the Central Government of Beijing, Tianjin and Shanghai.

3.1.3 The Intermediate Stage of Industrialization in the Market Economy Period

From 1980s to the early 1990s, with the gradual establishment of the socialist market economy system, Wuhan's industrial development was stagnating and restructured like many other old industrial bases across the country. A large number of small and medium-sized enterprises located in the main urban area were trapped in a plight of development. Over the years following 1990, structural changes occurred to Wuhan's industrial development. The construction of two state-level development zones, Wuhan East Lake High-tech Development Zone and Wuhan Economic & Technological Development Zone, and the flourishment of automotive assembly, electromechanical and optoelectronic industries, ushered in the transformation of Wuhan's industrial structure from traditional manufacturing to modern manufacturing.

3.2

Several Typical Models of the Regeneration and Development of Wuhan as an Old Industrial City

The Urban Industrial Development Model of “Restructuring the Old, Initiating the New”
The Relocating Development Model of Advanced Manufacturing Industry
The Protective Utilization Model of Industrial Heritages
The Ecological Restoration Model of Industrial Warehouse Land

3.2.1 The Urban Industrial Development Model of "Restructuring the Old, Initiating the New"

In April, 2003, to explore the path of revitalizing old industrial bases and accelerating the restructuring of state-owned enterprises, Wuhan creatively proposed to combining the initiation of urban industrial parks with the transformation of old industrial bases. This model of industrial park regeneration was characterized by full acquisition and reservation of the land of restructured enterprises, and investment of reserved funds in enterprise transformation to address the diversion of employees and pay off debts. Meanwhile, the Municipal Land Consolidation and Reserve Center re-deployed the existing factories, roads and environment in accordance with the park's development plan, attracted small and medium-sized private enterprises with low rents. Higher thresholds of industry, taxation, employment and environmental protection were for the settled enterprises, and the entry of polluted enterprises was prohibited, making the urban industrial park an incubator for small and medium-sized enterprises and a re-employment base or entrepreneurship platform for laid-off workers of state-owned enterprises. One representative park was Hanzheng Street Urban Industrial Park in Qiaokou District.

3.2.2 The Relocating Development Model of Advanced Manufacturing Industry

Entering the 21st century, Wuhan put forward a strategy of developing "both advanced manufacturing and modern service sectors". A batch of large heavy industry enterprises in the main urban area followed the strategy of "a shift from the secondary industry to the tertiary industry" and planned to relocate to the new urban agglomeration area. Restricted by land use and traffic conditions, traditional enterprises with cutting edge successively moved out of the downtown area. For example, Wuhan Iron and Steel (Group) Company relocated and restructured eight iron and steel production enterprises scattered in the main urban area, which were concentrated in West Yangluo Port Area, the eastern new urban agglomeration, to found a steel deep processing base. Typical large enterprises founded during the first Five-Year Plan period, such as Wuhan Heavy Duty Machine Tool Group Corporation, Wuhan Boiler Co., Ltd. and Wuhan Tobacco (Group) Co., Ltd., moved out of the main urban area in succession. Their former sites were used to build a series of mega project that mixed commercial and residential housing. Funds received by these enterprises were used for cluster development in the new urban agglomeration in the periphery of the central downtown, and proped up the development of advanced manufacturing in Wuhan.

3.2.3 The Protective Utilization Model of Industrial Heritages

In recent years, the important historical and cultural values of urban industrial heritages catch the attention of the society. Wuhan is also exploring the model of protective utilization of industrial heritages. The model stresses the inheritance of historical and cultural lines, and the continuation of old industrial brands. The protection and utilization of existing industrial plants has been maximized to endow them with new architectural functions and the characteristics of the times. The history of Wuhan's industrial development has been reproduced by transforming former production workshops into themed museums. Idle plants are transformed in large scale to preserve historical features and retain historical fragments and elements, which gradually became galleries, art centers, studios, fashion shops, restaurant and bars. Representative industrial parks include the "Made in Hanyang" Creative Park rebuilt in the original site of Hanyang Iron and Steel Factory by the bank of the Han River, and Wugang Yungu 606 Park in the east of Wuhan Railway Station, and so on.

3.2.4 The Ecological Restoration Model of Industrial Warehouse Land

Ecological restoration is also a model worthy of attention during the regeneration and redevelopment of old industrial zones in Wuhan. Wuhan thrived and flourished along rivers. However, till the 1990s, Wuhan was still a riverside city with "invisible rivers". With the decline of shipping on the Yangtze River, the prosperity of the areas once became a history. Nearly 230,000 square meters of dilapidated warehouses, yards and buildings plus nearly 50 docks of different sizes densely spread along the shoreline in Hankou were left in a deteriorated state. Entering the new millennium, Wuhan launched the flood control and landscape reconstruction project at the Bund of Hankou. Considering the need to remove water-preventing buildings for flood control and regulation of the Yangtze River, Wuhan relocated productive docks, removed disorderly warehouses, yards and dilapidated buildings, and began the waterfront ecological restoration and landscaping. In 2017, through soliciting international opinions, Wuhan formulated the "Yangtze River Main Axis Concept Plan" and built the "City Terrace" that could reflect the city's landscape and historical context along the two rivers and four banks. The old industrial land originally outside the embankment was built into an open riverside green corridor for public recreation, which is now popular among citizens and visitors.

3.3

Basic Information of Wugang Yungu 606

Historical Evolution
Traffic Accessibility
Industrial Functions
Plant Construction
Ecological Elements
Cultural Tourism Resources

Wugang Yungu 606, located at the “East Gate” of Wuhan Iron and Steel Corporation (WISCO) to the east of Wuhan Railway Station, is a tie of the East Lake New Town (Yangchunhu High-speed Railway Business District), the East Lake Scenic Area and WISCO. The East Lake New Town is a sub-center of the city according to the new general layout plan, w with the following major functions: a comprehensive transportation hub, for business and commerce, incubation of mass entrepreneurship and innovation, international community, cultural display and so on. WISCO, as the first super-large steel complex built after the founding of the People’s Republic of China, plans to optimize the industrial structure, and is actively developing strategic emerging industries such as intelligent manufacturing, energy conservation and environmental protection, and big data today. Among the first batch of national scenic areas, the East Lake Scenic Spot is an eco-tourism scenic area enjoying great fame far and near.

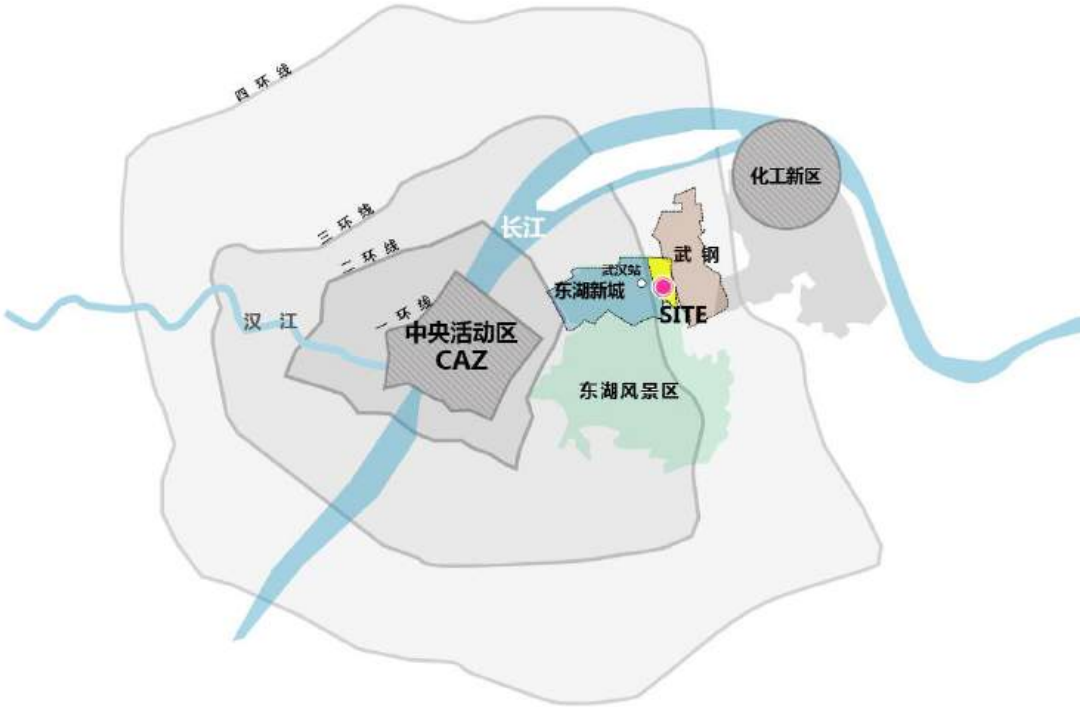

Figure 29: Schematic Diagram of the Location of Wugang Yungu 606

3.3.1 Historical Evolution

Wugang Yungu 606 was built in 1954 as Wuhan Metallurgical Equipment Manufacturing Plant under the former Ministry of Metallurgical Industry. In 1985, Wuhan Metallurgical Equipment Manufacturing Company merged Wuhan Metallurgical Equipment Manufacturing Plant, and inherited the name of Wuhan Metallurgical Equipment Manufacturing Company. It was transferred to be administered by Wuhan Municipality from the Ministry of Metallurgical Industry since January 1, 1985.

The plant was located in No. 10 Qingwang Road, Hongshan District, Wuhan, adjacent to the main plant area of WISCO, covering an area of 500,000 square meters, with a plant area of 220,000 square meters. The plant owned more than 1,300 sets of machining equipment. Many large, high-precision and rare foreign imported machines were used for key processes, especially the riveting welding process, as well as complete machining, casting, forging and heat treatment processing equipment and so on. It not only met the production needs of the industry, but also manufactured many large machines for other industries. The company mainly served the metallurgical sector, with products sold to industries like metallurgy, chemical engineering, machinery, hydropower, building materials, and construction.

Wugang Yungu was once one of China's large pillar manufacturers in the metallurgical machinery industry. It shared the construction with WISCO, ANSTEEL, BAOSTEEL and other large steel companies, supplying products such as lifting machinery, pressure vessels, metallurgical blast furnaces, sintering equipment, coking equipment, all kinds of industrial furnaces, dust removal equipment, metallurgical lifting appliances, mineral drill bits, industrial furnace burners, large buildings and bridge steel structures. Its products were sold to BAOSTEEL, WISCO, TISCO, SINOSTEEL, HUAISTEEL and other major steel plants, and also exported to Liberia, Indonesia, Pakistan and other countries.

The plant originally had an area of 48,000 square meters for steel structure and mechanical machining. For steel structure production, more than 40 sets of equipment were available for steel pretreatment, steel plate leveling, CNC cutting, photoelectric tracking cutting, etc. For mechanical treatment, horizontal lathe, vertical lathe of various types, as well as vertical CNC machining centers were provided.

3.3.2 Traffic Accessibility

The area is blessed with convenient external traffic conditions. Wuhan Railway Station on the west of the area offers access to major economic areas of the country within two to seven hours. There are also two subway lines. One is Subway Line 5 that connects areas like High-Speed Railway Business District, Old Qingshan Downtown, Xudong Business District, Wuchang Ancient Town, Baishazhou. It is currently a built-up subway line with one station (Changqian Station). Another line is Xingang Line under construction, which is designed to strengthen the connection between the central urban area (High-Speed Railway Business District) and the suburban district Yangluo, with Tiepuling Station on Qingwang Highway. In addition, on the west of the area, Wuhan Railway Station is surrounded by Subway Line 4 (completed), and Lines 20 and 19 (planned).

Among them, the Line 4 connects High-Speed Railway Business District, Xudong Business District, Chu River Han Street, Zhongnan Road and Zhongbei Road, Wuchang Ancient Town, Hanyang District, Caidian District and other areas. The Line 20 is planned to connect Wuhan Railway Station, High-speed Railway Business District, Changjiang New Area and Tianhe Airport, etc. The Line 19 is a subway line under construction, connecting Wuhan Railway Station, High-speed Railway Business District, Gujia area, the East Lake High-tech Zone and other functional agglomeration areas. The area borders on Wuhan 3rd Ring Road, Huanle Avenue and Wuhan-Ezhou Expressway. The 3rd Ring Road is an important fast road ring in Wuhan. Huanle Avenue is a key urban fast road on the north bank of the East Lake. Wuhan-Ezhou Expressway is an important expressway connecting the Wuhan-Ezhou-Huanggang-Huangshi Urban Agglomeration.

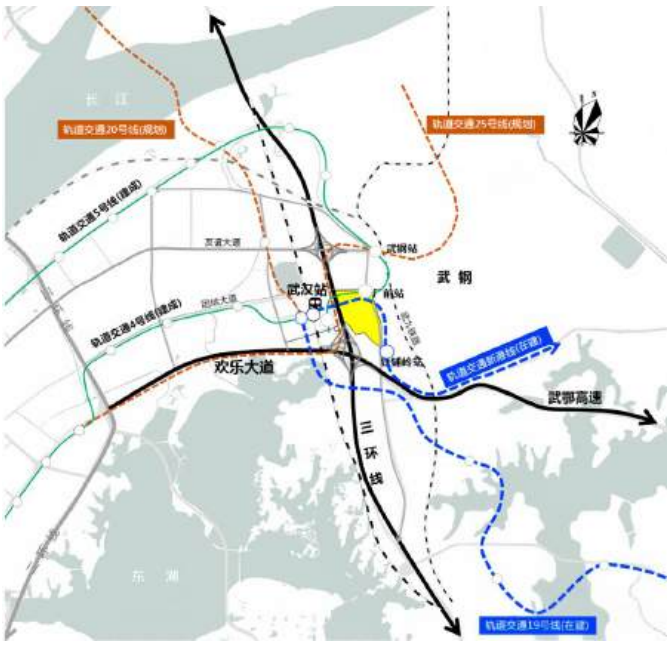

Figure 30: Traffic Accessibility of Wugang Yungu 606

3.3.3 Industrial Functions

The plant used to be a supplier of metallurgical sector primarily, with products for sectors such as metallurgy, chemical engineering, machinery, hydropower, building materials, and construction. It once possessed more than 1300 sets of machining equipment, including many large, high-precision and rare imported equipment for key processes, especially the riveting welding process, as well as a complete set of processing equipment for machining, casting, forging and heat treatment. Thus, it could not only meet the production needs of the industry, but also manufacture many large machines for other industries.

3.3.4 Plant Construction

Covering a total area of 220,000 square meters, the plant has undergone six rounds of construction and became one of the sites within Wuhan's main urban area where the industrial heritages are relatively concentrated and well-preserved. It has more than 30 buildings with the preservation value, such as workshops and office buildings, with the largest single building up to 26,000 square meters, reflecting a strong spirit of industrial age and carrying the valuable memories of the times. The plant also has eight infrastructure facilities, including two water towers, a chimney, three gantry cranes, and two other structures, as well as two facilities of non-material culture, such as a statue of Chairman Mao Zedong and a place of historical memory, which hold a significant historical and artistic value.

Figure 31: Plant Buildings of Wugang Yungu 606 Marked with Different Construction Years

3.3.5 Ecological Elements

The ecological green spaces around the plant are abundant. The plant faces the East Lake to the south, with the planned green space of the East Lake New Town accounting for 37%, including the ecological framework system covering 6.98 square kilometers of green land and waters. The green belt of the 3rd Ring Road is an important ecological corridor connecting the Yangtze River and the East Lake. The Two-port Sponge Park is a large open space built around the East Lake Port and the Shahu Port, which serves the functions integrating ecological conservation, leisure sports, rainwater storage and retention. The plant has lush vegetations and a pleasant environment.

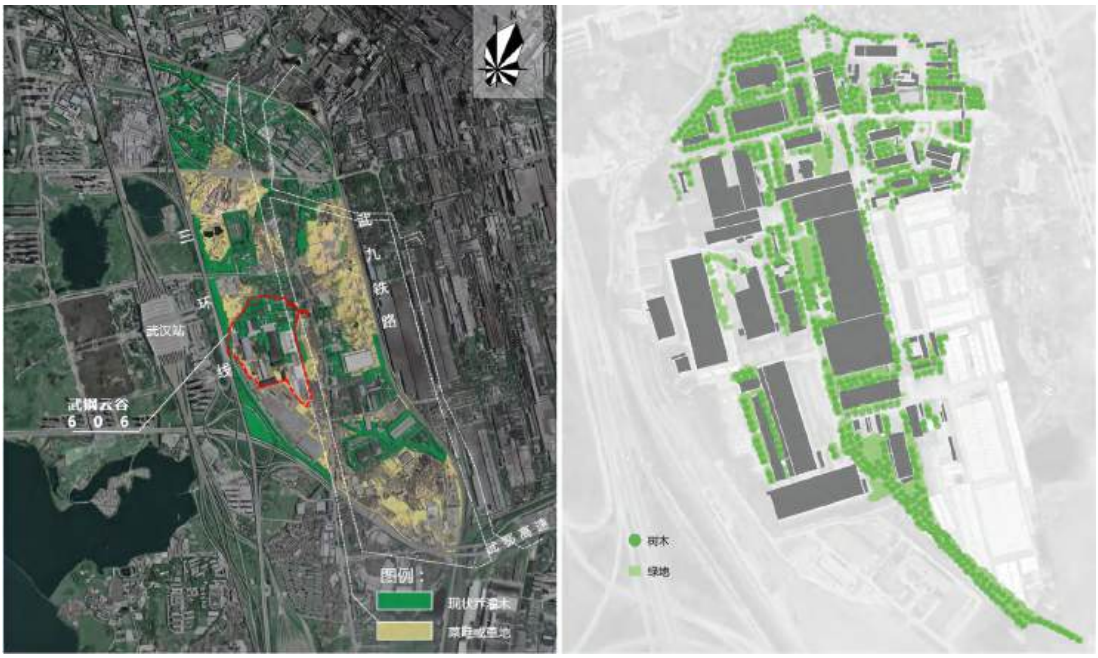

Figure 32: Distribution Scheme of Wugang Yungu 606 Plant and Surrounding Vegetation

3.3.6 Cultural Tourism Resources

There are abundant cultural tourism resources in the plant and its surrounding area. The former Yungu 606 Plant contains industrial buildings and structures holding historical memories. WISCO boasts rich cultural tourism resources within. At present Wugang Culture Tourism Zone has been built up, taking national industrial heritages, revolutionary culture, green production park, and intelligent manufacturing as the main landscape, involving over 50 tourist sites like geographic and cultural landscape, architectural facilities, landscaping ancillary buildings, architectural oddments etc. demonstrating the magnificent tourist characteristics of the iron and steel industry.

The cultural tourism resources in the periphery of the plant are mainly distributed in the East Lake Scenic Area, including Happy Valley, Maya Water Park, Ecological Art Peninsula, East Lake Greenway, Moshan Hill Scenic Area, Moshan Cherry Garden, East Lake Cedar Art Museum, Dali Cultural & Creative Village, etc. The cultural tourism resources outside the scenic area mainly rely on natural water bodies and centralized landscaping, including Luoyan Scenic Area, Gujia Scenic Area, Heping Park, Dongneng Port, and Qingshan Red House.

Figure 33: Distribution Scheme of Wugang Yungu 606 and Surrounding Cultural Tourism Resources

2.4

Regeneration Wugang Yungu 606

Restoring as Before
Functional Replacement
Customized Design

Strategies like restoring as before, functional replacement and customized design are adopted in the urban regeneration of Wugang Yungu and the adaptive reuse of old industrial buildings to restore them as before to the greatest extent, and render them a new connotation of the times.

3.4.1 Restoring as Before

Some old industrial buildings in the plant exhibit very meaningful historical features. However, due to a long history and serious damages, they need to be renovated. During the adaptive reuse, the vast majority of buildings are aimed to be restored as what they were previously. In this way, the imprints these building left in the history can be continued to the maximum extent. For the rest of buildings that cannot be used nowadays, partial transformation is carried out, with the original styles fully retained and forms restored as what they were like before to the greatest extent.

3.4.2 Functional Replacement

Maintenance and restoration efforts are made while preserving the space and appearance of the original buildings. Direct replacement is made after identifying functions with similar requirements for space use, to revitalize these buildings. Plant buildings with a large span and large spaces are modified for performance, business, auditorium and other functions, and buildings with smaller spaces and a small span are transformed into offices, dormitories and service supporting rooms, etc.

Figure 34: Bird View of Wugang Yungu 606 After Regeneration of Initial Built-up Area

3.4.3 Customized Design

During the redevelopment of Wugang Yungu, three levels of operating companies are united for a customized design. The user is considered as the designer to promote diversity and heterogeneity of buildings and places in the park and strengthen the fit of space supply with market demand through customized design.

3.6

Main Features of Industrial Revitalization and Regeneration of Wugang Yungu 606

Multi-governance to Promote the Transformation and High-quality Development of Heavy Industrial Areas

Spatial Planning for Industry to Promote Efficient Development and Sustained Urban Vitality

The “Preserving the Old, Implanting the New, Restoring as Before” Strategy to Promote Industrial Heritage Preservation

“Micro-intervention” Brownfield Landscape Management to Achieve Environmental Transformation from “Gray to Green” at Minimal Costs

Supporting the Park’s Industrial Development in the Full Lifecycle and Promoting Sustainable Economic Prosperity

3.5.1 Multi-governance to Promote the Transformation and High-quality Development of Heavy Industrial Areas

Wugang Yungu 606 adopts a co-working model of “enterprise-led + government engagement + technological team” to guide enterprises for independent regeneration of parks and strengthened coordination of the area. The “leading enterprise”, WISCO Group, was the first super-large steelworks established after the founding of the Peoples Republic of China. Under today’s macroeconomic background of “resolving excess capacity”, WISCO has put forward a strategy to optimize its industrial structure, and actively planned emerging industries such as intelligent manufacturing, energy conservation, environmental protection, and big data. It has chosen Yungu 606 on the west of the main plant as a pilot area, and leveraged its geographic advantage as WISCO’s gateway and its “catalyst” effect to facilitate the development of strategically emerging industries. The “government-engaged platform” is a joint working group formed by the jurisdiction government, planning authority and municipal reserve agency, to be responsible for comprehensive coordination, land reserve management and infrastructure development. Among them, the planning authority works together with the government to set up the municipal joint working group to carry out regular research and advancement of project plan, construction and operation, strengthen the inter-departmental coordination efforts among the district Development and Reform Commission, Investment Promotion, Urban Construction, Water Affairsand other departments, and facilitate the progress of different facility projects. Municipal reserve organizations are mainly responsible for specific construction such as land reserve, infrastructure construction, and park landscaping, and relieving enterprises from worries about regeneration and development by enhancing policies and funding supports . The “technological team”, composed of local planning institutes and high-level organizations, systematically makes planning, addresses issues such as industrial integration, project coordination and construction scheduling, and provides technical support and follow-up services during the subsequent planning and implementation stages.

3.5.2 Spatial Planning for Industry to Promote Efficient Development and Sustained Urban Vitality

The spatial planning, centered on development of industries, aims to facilitate corporate transformation and upgrades, particularly for heavy chemical companies like WISCO. To assist in resolving operational difficulties, the planning team conducted in-depth surveys to identify the plant's resources and advantages. They coordinated with potential partners in smart IoT and intelligent robotics, and engaged in multiple rounds of technical studies with professional planning and architectural design teams.
The plan emphasizes both fulfilling urban functional requirements and achieving business outcomes, with surrounding areas developed into a balanced industrial-residential community under the perfect community concept, providing service facilities such as apartments for talents, fashion hotels and creative cafes, catering to business needs while accommodating future urban growth. This approach aims to create a vibrant 24-hour park that supports innovation and diverse activities.

Figure 35: esign Rendering of Wugang Yungu 606

Figure 36: Initial Built-up Area of Wugang Yungu 606

3.5.3 The "Preserving the Old, Implanting the New, Restoring as Before" Strategy to Promote Industrial Heritage Preservation

Figures 37: Repair and Reconstruction of the Plant Area and Industrial Element of Wugang Yungu 606

On the basis of fully respecting the existing conditions, a strategy of "preserving the old, implanting the new" is proposed. "Preserving the old" aims to retain the most concentrated historical memories with the most well-preserved plant site in Wuhan's central urban area, preserve industrial symbols such as water towers and lathes, and maintain the original industrial symbols and texture of factory buildings. For the initial building area, internationally renowned planning and architectural firms have been invited to renovate 13 distinctive buildings, covering nearly 30,000 square meters, in accordance with the "restoring as before" concept. "Implanting the new" refers to introducing new functional buildings and eco-friendly spaces, bringing innovative functions to "large-span plant buildings", and through overall restructuring by overlapping new and old buildings, meeting the requirements of new industries for large-span facilities while imbuing them with contemporary connotations.

3.5.4 “Micro-intervention” Brownfield Landscape Management to Achieve Environmental Transformation from “Gray to Green” at Minimal Costs

The project fully implements a “micro-intervention, localized, carbon-reducing” approach to brownfield management, replacing mildly contaminated soil within the park. The landscaping favors local vegetation over expensive ornamental flowers, thus developing semi-natural or man-made plant communities. A sustainable urban drainage system is built by introducing perennial flower meadows, trees, shrubs, and rain gardens to reduce surface runoffs in case of extreme weather and alleviate the long-standing waterlogging risks in the area. Idle industrial elements are repurposed to create functional and fasinating landscape facilities, and build a vibrant and resilient public space at minimal environmental and financial costs.

3.5.5 Supporting the Park’s Industrial Development in the Full Lifecycle and Promoting Sustainable Economic Prosperity

For implementation and operations, the pre- operations and the “linkage of primary, secondary and tertiary” land markets are given equal attention to serve the park’s full lifecycle of “planning—design—construction—operation”. With the clearly planned “new technology” industry as an example, a panoramic overview of the industrial chain has been presented to highlight the catalogues of “key and potential target companies for investment” and “opportunistic investment promotion”. 140-odd preliminary interviews with target companies have been conducted, and based on the space requirements of target companies, the carriers for new technology products have been provided to meet the different growth needs of companies. Moreover, a survey was conducted on the inventory of office supplies in Wuhan, with strict control over the product supply of traditional offices for better destocking.

3.6

Implementation Outcomes of Industrial Revitalization

The urban design has been completed so far, along with the Initial Built-up Area opened in June 2023 as a park led by “Tech + Cultural Innovation”. In October 2023, Wugang Yungu 606, one of the venues for Wuhan Biennale, attracted numerous professionals from the industry and citizens to visit. So far, the park has successfully signed agreements with various innovative companies in animation, live streaming, and tech finance, reaching a signing rate of 90%, making it popular for investment by innovative companies. In March 2024, WISCO Group and Goldenport signed an agreement at Wugang Yungu 606 Park on the construction of the Goldenport NEV World Industrial Park, for developing technological application for new energy vehicles and experience testing of autonomous driving scenarios.

In September 2024, Wuhan Store of Dongchedi Auto Mall, the largest physical car mall under the brand, settled in Wugang Yungu 606 Park. Dongchedi is a well-known one-stop platform for auto information, trading and service. With its real and professional auto content and convenient efficient selection and purchase experience, it is deeply loved by massive auto amateurs and consumers. It covers a signed store area of nearly 20,000 square meters and a showroom accommodating over 500 vehicles for display, providing auto cultural experiences. At the opening ceremony, hundreds of auto trendsetters came to the venue, where the grand lighting atmosphere and interesting interactive market caused a sensation. The geographical advantages of Wugang Yungu 606 Park can bring a brand-new car purchasing experience to consumers of Wuhan, the surrounding cities and even the whole country. In the future, WISCO plans to further invest RMB 10 billion in Yungu 606 and its surrounding areas to build Baowu Group Wuhan Headquarters, and continually introduce upstream and downstream industry chains and affiliated companies to create the Baowu industrial ecosystem of innovation.

Figures 38 : Exterior of Wuhan Store, Dongchedi Auto Mall

Figures 39 : Indoor View of Dongchedi Car Mall Wuhan Store

East Lake Dali Village

04

4.1 Basic Information of Dali Village

4.2 Predicaments of Dali Village' s Renovation

4.3 Core Measures of Dali Village' s Renovation

4.4 Regeneration Features of the Project

4.5 Implementation Outcomes

REGENERATION


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4.1

Basic Information of Dali Village

Village amid Scenic Area on the South Bank of the East Lake
Spontaneous Aggregation of Cultural and Creative Industries
Serious Indiscriminate Construction
Insufficient Construction of Municipal Public Service Facilities

4.1.1 Village amid Scenic Area on the South Bank of the East LakeLake

Dali Village, located at the south gateway of Moshan Scenic Area, lying at the heart of the East Lake Scenic Area, adjacent to Wuhan Botanical Garden, East Lake Cherry Blossom Garden, and East Lake Plum Garden, is one of the four natural parts under Qiaoliang Village. It is typical of the village amid scenic area. The village has a total area of 31.93 hectares, with 387 permanent residents in 113 households, 354 migrant residents in 118 households. The village is only 2.5 kilometers away from China University of Geosciences and Huazhong University of Science and Technology in the south, thus being under a strong cultural influence.

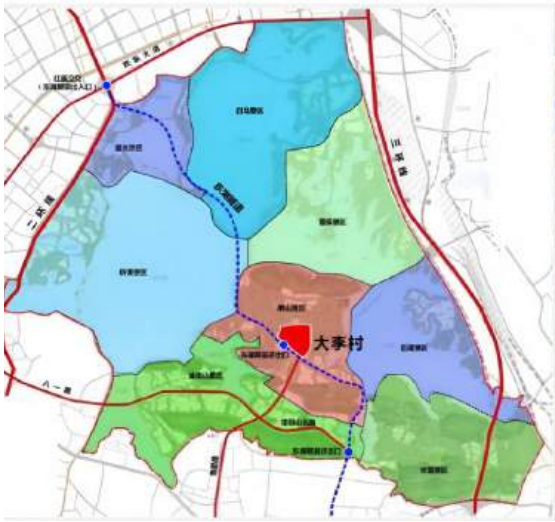

Figure 40: Location of Dali Village in the East Lake Scenic Area

Figure 41: Map of Dali Village and the Surroundings

4.1.2 Spontaneous Aggregation of Cultural and Creative Industries

With its beautiful ecological environment, convenient external transportation, independent village space and affordable rental price, Dali Village is highly favored by cultural creators. In recent years, the Village gradually develops into a cultural and creative industry cluster and professional workshop targeting university teachers and students, gathering a number of intangible cultural heritage bearers of Chu Pottery, Chu Music, Chu Lacquer and Chu Embroidery. There are now thirty-four cultural and creative spaces, four featured homestays, ten small businesses and one enterprise in the village.

Figure 42: Distribution of Cultural and Creative Spaces in Dali Village

4.1.3 Serious Indiscriminate Construction

Before the renovation, Dali Village had 327 buildings, including 167 bungalows (excluding the built huts), covering an area of 20,748 square meters. 160 houses with two or more stories covered a total area of 71,890 square meters (excluding additionally built floors).A serious problem of indiscriminate construction stood out, including 120 places of indiscriminately built buildings and facilities, among which 70 one-floor huts were built outside main buildings, covering a total area of 4,050 square meters. 44 places were added to the original structures, covering a total area of 5,860 square meters. Six other additionally built buildings and facilities covered a total area of 3,000 square meters. Also, ten unoccupied houses in poor conditions for long became dilapidated .

4.1.4 Insufficient Construction of Municipal Public Service Facilities

In a long period of time, villagers' private constructions encroached limited public spaces, resulting in insufficient public spaces and difficulty in constructing parking lots. Roads in the village were narrow, with many discontinuous roads hindering driving. Without sufficient rainwater sewage pipelines and sanitation facilities, sewage was discharged at will. Street lamp facilities and firefighting facilities were also deficient, posing safety risks.

Figure 43: Current Facility Status of Dali Village

4.2

Predicaments of Dali Village's Renovation

In 2019, taking the opportunity of holding the Military World Games, the East Lake Scenic Area Administrative Committee initiated the "small-scale renovation" (Phase One) in Dali Village, covering an area of about 10 hectares, involving over 120 buildings, with a total construction area of 120,000 square meters. The Scenic Area Administrative Committee had limited funds for renovation, hence could not support the overall relocation and reconstruction of the village. Meanwhile, private buildings, leasing and transfer of villagers made the housing and land ownership in Dali Village too complicated. Moreover, a large number of cultural and creative museum owners and merchants settled down, plus the influx of migrants, made the composition of stakeholder groups and related interest appeals in Dali Village even more complex (Table 1). Vast differences existed in appeals among villagers, and villagers' high expectation for the relocation compensation made it difficult to be compromised on this issue. In addition to the funding, property rights, interest coordination and compensation predicaments, the renovation of Dali Village also faced the challenges of a pressing schedule, onerous tasks and high demands.

Respondent	Appeals of Stakeholders
Villagers	(1)Build rainwater and sewage pipelines, street lights, sanitation facilities, firefighting and other facilities, and solve the road parking problems urgently (2) Rectify most of the facades need rectification since part of the buildings is in poor quality (3) Most villagers hope to settle locally or rectify Dali Village in the form of "small-scale renovation" while a few villagers want to get compensation for relocation
Owners of homestay facilities, cultural and creative museums	(1)Infrastructure needs to be improved, and the environment needs to be rectified (2)Avoid commercialization during the construction process, explore Wuhan's traditional cultural connotations, and retain historical houses as much as possible (3)Expressed the wish to sign long-term contracts with villagers for curbing arbitrary rental hike (4)Owners are responsible for the renovation of cultural and creative museums themselves

Respondent	Appeals of Stakeholders
Community	(1)Adopt a small-scale renovation approach for the comprehensive rectification of the environment and improvement of all kinds of facilities (2)Introduce the cultural and creative industry and establish ecological tribes, including a natural and humanistic ecosystem and an entrepreneurial ecosystem (3)The planning of a cultural creativity village must attach great importance to public participation, including collaboration of the government, villagers and owners of cultural and creative museums for mutual benefits and win-win outcomes
East Lake Scenic Area Administrative Committee	(1)Renovate Dali Village before the Military World Games, and turn it to be a national famous name label of Wuhan (2) Properly control the renovation cost (3) Avoid mass events or other malignant events

Table 1 : Appeals of Stakeholders

Core Measures of Dali Village's Renovation

Models and Goals of Renovation
Implementation Measures

4.3.1 Models and Goals of Renovation

Considering the current predicaments of Dali Village and interest appeals of various stakeholders, the renovation of Dali Village adopts the model of "small-scale renovation and minimal intervention". It takes building the "First Cultural and Creative Village on the Land of Chu" as the general target, follows the principles of four "benefits", three "autonomies" and two "unities", and jointly undertakes construction, sharing and renovation through multi-stakeholder participation. Among them, the four "benefits" refer to the benefit of improving the living environment of villagers, the benefit of enhancing the entrepreneurial environment for commercial tenants, the benefit of developing the community's collective economy and the benefit of creating a cultural brand for the scenic area. Three "autonomies" refer to entrepreneurial autonomy, format autonomy, and operation autonomy. Two "unities" refer to unified planning and management by the government, and unified construction of municipal infrastructures and public service facilities.

4.3.2 Implementation Measures

Led by the East Lake Scenic Area Administrative Committee, with the assistance of Wuhan Tourism Development and Investment Co., Ltd. and Qiaoliang Community Neighborhood Committee and the collaboration of all villagers, cultural and creative museum owners and commercial tenants of Dali Village, and designed by professional teams from universities, the Dali Village renovation project promotes the renovation, construction and operation from three dimensions: spatial environment, industrial development and social organization.

Figure 44: An Overall Bird's View

Figure 45: Master Plan

"Small-scale Renovation" of Spatial Environment

The road network is reasonably planned and delicately laid out in accordance with the distribution of buildings, roads, vegetations and water bodies, under the principles of "avoiding demolishment of buildings" and "eradicating cutting down a tree". Four buildings (unlawful or dilapidated) were demolished and five villagers were compensated at the minimum costs to connect the entire road system and expand public spaces.

Buildings were mainly renovated on facades for the best effects at minimal costs and without destroying the original structure. The Scenic Area Administrative Committee is responsible for the non-cultural and creative buildings along Lumo Road, and owners of cultural and creative museums take charge of such buildings. For other buildings, villagers and commercial tenants are responsible for facade renovations according to the plans provided by the Scenic Area Administrative Committee. Owners of cultural and creative museums bear the renovation expenses of cultural and creative buildings, , while those paid by commercial tenants and villagers are partially subsidized by the Scenic Area Administrative Committee.

Figure46: East Lake 177 Arts Restaurant

Figure 47: Chu Pottery Art Museum

The road renovation focuses on the cluster of villagers on the west of Dali Village to build "two fairs, three roads and eight alleys". "Two fairs" refer to the cultural and creative fairs built on the north and south by virtue of the two public spaces expanded through demolition. "Three roads" mean to build three motorways of 4-7 meters width to meet the traffic need of motor vehicles and fire safety purpose. "Eight alleys" mean to build eight walkways of 2.5-meter width for walking. In addition, the eight alleys are given artistic names to cater for the cultural creative atmosphere of Dali Village.

For municipal facilities, a rainwater sewage pipeline is laid out with consideration of the terrain, landform and roads. Parking lots, public toilets, garbage transfer stations, trash cans and other facilities are placed at road intersections and key nodes of the village. Road signs, seats, street lights and other landscape installations are specially designed to create a cultural characteristic signage system in Dali Village.

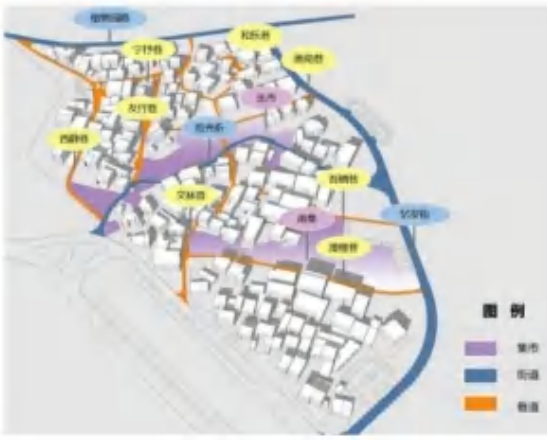

Figure 48: Layout of Two Fairs, Three Roads and Eight Alleys

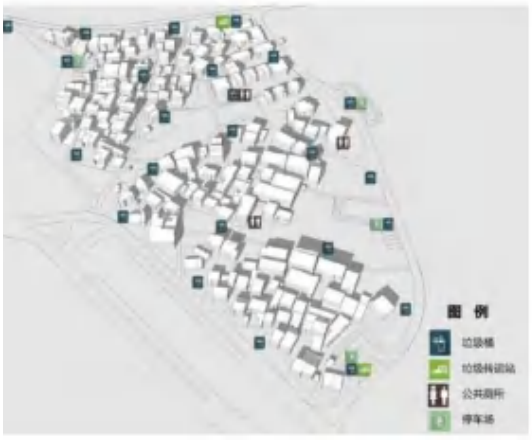

Figure 49:Planning of Municipal Public Service Facilities

Industrial Development Planning

With existing cultural and creative resources, by taking advantage of the geographic proximity to the Optics Valley, China University of Geosciences and Huazhong University of Science and Technology, a cultural and creative area characterized by handcrafts innovation, an ecological pastoral area characterized by agricultural production and an intelligent innovation area characterized by digital creativity (Figure 50) are built. Among them, the cultural and creative area is built in Dali Village (Phase One), attracting 10-20 companies in relation to cultural and creative handcrafts works, cultural and creative experiences, cultural and creative education and cultural and creative consumptions. In this way, the cultural and creative industry chain of Dali Village can be expanded and the influence of cultural brands can be amplified. The ecological pastoral and digital creative areas are also planned and laid out in the proximity, with smart agriculture explored and digital creative industry developed.

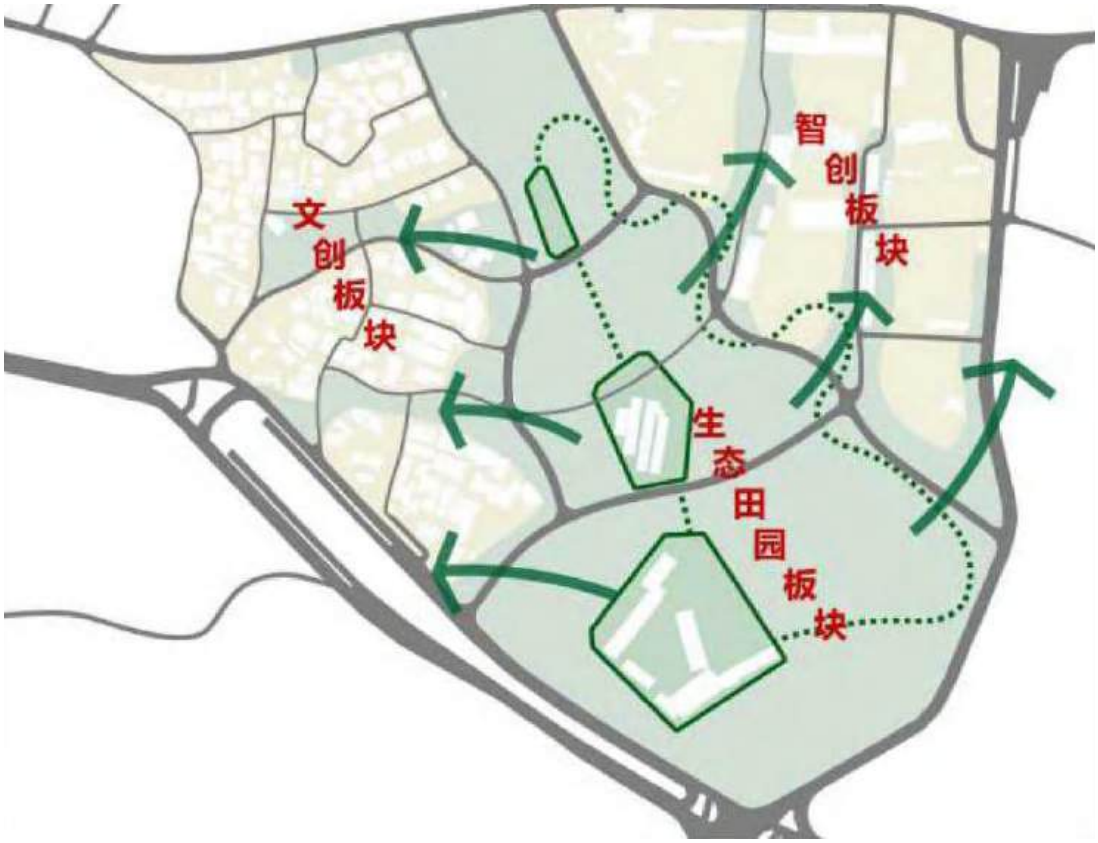

Figure 50: Layout Plan of the Three Functional Areas

Development of Social Organizations

After the launch of the "small-scale renovation" project in Dali Village, the hike of rental prices by villagers forced some cultural and creative museum owners to move out. For the long-term stable development of the cultural and creative industry, led by the Scenic Area Administrative Committee, the Dali Village Cultural and Creative Cooperatives were founded by villagers, owners of museums, neighborhood committees and Wuhan Tourism Development and Investment Co., Ltd., with an aim to form a community of shared interests, promote the development of the cultural and creative industry, and allow all members to share the benefits of the "small-scale renovation" of Dali Village.

Regeneration Features of the Project

Multi-stakeholder Participation for Co-creation
Small-scale Renovation with Minimal Intervention to Improve Environmental Quality
Simplified Approval Processes and Policy Innovation
Developing an Industrial Ecosystem and a Collaborative Platform

As a cultural and creative gem of the East Lake Scenic Area, Dali Village's renovation showcased distinctive characteristics in organizational models, renovation methods, approval procedures, and operational management. The project incorporated the creativity and suggestions of villagers, commercial tenants, artists, designers, and social organizations, resulting in a unique environment that blended the local rustic charm with modern artistic elements through ongoing renovation efforts, and making it the most brilliant scenery of the East Lake Scenic Area.

4.4.1 Multi-stakeholder Participation for Co-creation

The project adheres to the principle of co-creation through government guidance, village-level organization, participation of villagers and commercial tenants, and university-led design to meet the practical needs of the community and villagers and fulfill the governance goals at the grassroots level.

Firstly, a moderate investment from the government focuses on infrastructure reconstruction

The government invests 65 million yuan to improve municipal infrastructure, eliminate fire safety hazards, and enhance the internal environment of the village, while villagers and commercial tenants contribute nearly 200 million yuan to renovate existing buildings and courtyards to achieve improvements in 65 dilapidated houses, facades and the environment, thereby elevating the overall environmental quality of the village.

Figure 51: East Lake Time Tunnel

Secondly, owners lead the renovation to improve buildings

Without altering original structures, cultural and creative buildings are renovated by owners, while other buildings are renovated by villagers and commercial tenants according to the facade improvement plans provided by the Scenic Area Administrative Committee. This approach can achieve the best effects at minimal costs.

Figure 52: Pompei Restaurant Before and After the Renovation

Thirdly, in collaboration with universities throughout the renovation, teams from universities provide services on the field

Faculty and students from Departments of Planning, Architecture, Landscape, Art, Public Management at School of Architecture and Urban Planning and Department of Sociology, Huazhong University of Science and Technology are actively involved in all stages of the village renovation, from planning and architectural design to construction guidance, housing renovation guidance, as well as formulation of village management rules, thus enabling the transformation of Dali from a “village inside the city” to a “cultural and creative village”.

Figure 53: Field Services by Faculty and Students from School of Architecture and Urban Planning, Huazhong University of Science and Technology

4.4.2 Small-scale Renovation with Minimal Intervention to Improve Environmental Quality

Firstly, through small-scale renovation, the project has retained the village's original landscape and improved public spaces

It has retained the village's original appearance as much as possible, and reasonably planned road networks according to the distribution of buildings, roads, vegetations, and water bodies, following the principle of "minimizing tree removal, avoiding lake filling, and limiting demolition". By means of the small-scale intervention and delicate layout planning, the entire road system is well linked to expand public spaces.

Figure 54: Village Entrance

Figure 55:Rural Walkway

Secondly, through minimal intervention, the project reasonably determines the village's design standards as appropriate to local conditions

By avoiding "over-planning" and "over-design", the renovation allows for "industry autonomy, format autonomy, design autonomy, and creative freedom" without unified requirements for the roof color nor materials, leaving room for non-standard designs, spaces, economy and business patterns devised by designers, villagers, commercial tenants and owners of cultural and creative museums. This can not only reduce renovation costs, but also lift the environmental quality and economic vitality through inclusive community participation.

Figure 56: Buildings After (Left) the Renovation and Status Quo (Right)

4.4.3 Simplified Approval Processes and Policy Innovation

Firstly, the “small-scale renovation” model has simplified administrative approval procedures

Since Dali Village has been designated by the Scenic Area Administrative Committee to undergo the small-scale renovation model, it fails to involve land use changes and building increments, except for minor fire safety-related demolitions, without the need of obtaining the “planning permission”, which significantly reduces the time cost of project implementation.

Secondly, policy innovation for small-scale renovation

The Scenic Area Administrative Committee has introduced the “Three Original Principles” (renovating in the original sites, maintaining the original building heights and areas) in the form of meeting minutes. This policy not only greatly reduces the bureaucratic costs of applying for “dangerous building assessments” and “construction permission” per household, but also decreases the institutional expenses for project implementation and grassroots governance.

Figure 57: East Lake Dali Village After the Small-scale Renovation

4.4.4 Developing an Industrial Ecosystem and a Collaborative Platform

Firstly, the project leverages cultural and creative resources, creates an industrial ecosystem and drives industrial development

Phase One of the Dali Village project pools a good many artisans, artists, and designers. It introduces diversified business patterns such as shops, restaurants, cafes, and homestays in combination with cultural creativity, to enrich the cultural tourism experiences of visitors. Various cultural activities, such as art exhibitions, cultural salons, workshops, and seasonal fairs, are regularly organized to further revitalize the industry.

Secondly, cooperatives are established for sharing with multiple stakeholders

The project has built a community with shared interests comprising villagers, owners of cultural and creative space owners museums, residents' committees and platform companies. This collaboration is designed to promote the development of the cultural creativity industry, and achieve a win-win situation among villagers, owners of cultural and creative space owners and commercial tenants, thereby improving the residents' living conditions and the environment for entrepreneurship, developing the collective economy of the community, building a cultural brand for the scenic area and transforming the village from a rural area to a tourist destination.

4.5

Implementation Outcomes

Currently, Dali Village has embraced the cultural creativity industry, homestays, and dining businesses, and attracted 54 small to medium-sized cultural and creative enterprises and tourism-service companies. In consequence, over 500 jobs are created, including more than 120 for local villagers, with their income increased over fivefold. The three educational platforms—the "Co-created" classroom, the "Big Ideological and Political Education" classroom, and the "Off-Campus" Party School of the Central Committee of CPC[5] classroom—contribute to the formation of a distinctive cultural tourism brand for Dali Village, making it an Internet influential attraction in the East Lake Scenic Area. This has not only improved the village environment but also promoted the development of the cultural and creative industry and tourism services, thereby fostering an integration between the scenic area and the village, raising villagers' income, and exploring a new path for co-creation in Village amid Scenic Area .

Looking ahead, Phase Two of Dali Village's renovation targets to address the over-homogenization identified in Phase One. The village plans to reclaim existing collective housing (39,000 square meters) for unified leasing and operations, introducing functions such as tourism service hubs, branded hotels, and experiential performance venues to fill the gaps in tourism services, and providing more complete facilities for Moshan Scenic Area. The design has already passed the site selection approval by the Forestry and Grassland Administration of Hubei Province.

Modeling after Dali Village's renovation, surrounding villages such as Dongtou Village and Maowuling Village explore new approaches to village-wide renovations and unified leasing operations, with an aim to facilitate the integration of village and the scenic area, enabling all stakeholders, including villagers, commercial tenants, the village and the government to share in the benefits of development, and achieving win-win outcomes for all.

Figure 58: Bird's View of Phase One

Pay special tribute to Professor Hong Liangping, and Mr. Zhu Jiaoteng and Mr. Ding Boyu from Huazhong University of Science and Technology, who provided valuable materials and documents for the research report.

The Party School of the Central Committee of the Communist Party of China (National School of Administration) is a school where the Party Central Committee trains high-level leading administering talents and outstanding young and middle-aged administering talents across the country. It is an important position for studying and publicizing Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and promoting the Party's ideological and theoretical construction.[5]

Building Ecological Resilience of Sino-French Peninsula Town

05

REGENERATION

5.1

Project Overview

Profile
Challenges

5.1.1 Profile

Figure 59: Location Map of Wuhan Sino-French Peninsula Town

In line with the principles of ecological civilization construction and sustainable development, and to cope with global challenges such as climate change and environmental protection, China and France signed an agreement in 2014 to establish the Sino-French Wuhan Ecological Demonstration City. In December 2019, to implement the essence of conference talk between the two heads of state, and on the fifth anniversary of the signing of the agreement, Wuhan continued to promote the high-quality development of the Sino-French Wuhan Ecological Demonstration City by proposing Sino-French Peninsula Town as the first low-carbon ecological pilot zone within the city. This demonstration project is being jointly developed by the Chinese municipal and district governments, in cooperation with the French Consulate General in Wuhan, to explore the "Wuhan Standard" in the field of ecological construction. The aim is to create a low-impact, low-carbon, convenient and vibrant sustainable ecological town.

The Sino-French Peninsula Town is situated in the southeastern part of the Sino-French Wuhan Ecological Demonstration City, adjacent to the northern shore of Houguan Lake. It spans a total area of 8.2 square kilometers, with a core area of 2.2 square kilometers. The terrain is generally flat, sloping from north to south, with a central ridge running through the middle, creating a "ridge-back" shape from south to north. The existing villages are built along the higher ground, while farmland, forests, fields, and ponds are scattered across the east and west sides. The area features a unique topographical layout described as "three sides facing the lake, surrounded by ponds, and a turtle-back extension". The site is home to numerous lakeside ponds, with wetlands covering 25% of the area. The ecological lakeshore stretches for 4.5 kilometers, offering abundant lakeside wetland ecological resources. With high vegetation coverage and a variety of fish and bird populations, the area boasts a strong aquatic ecological foundation..

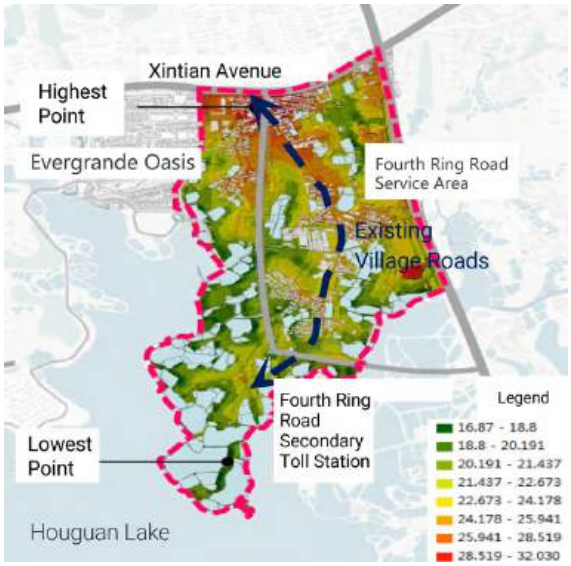

Figure 60: Present Site Distribution Diagram

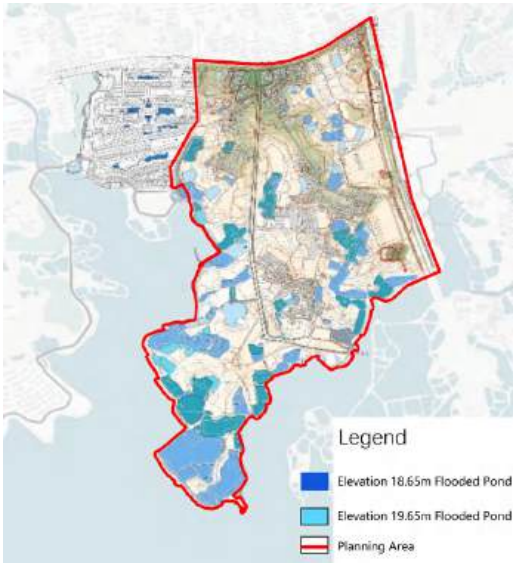

Figure 61: Distribution Diagram of the Present Ponds

5.1.2 Challenges

First, there is a risk of waterlogging in the lakeside areas, and the resilience to extreme rainfall is insufficient

This region experiences a subtropical humid monsoon climate characterized by abundant rainfall, ample sunshine, and distinct seasons, with high temperatures and concentrated precipitation in summer. The average annual rainfall is 1,269 mm, mostly occurring between June and August. Sino-French Peninsula Town is surrounded by Houguan Lake on three sides, and primarily relies on existing ditches and lakeside ponds for drainage and water retention. In recent years, as extreme weather and heavy rainfall events have become more frequent, the drainage system within the peninsula has been largely unorganized, lacking a comprehensive drainage infrastructure. The fluctuating water levels of Houguan Lake significantly affect the area's flood safety, posing a risk of internal flooding and waterlogging. The region faces substantial challenges in stormwater management, with insufficient resilience to extreme rainfall events.

Second, the water environment is poor in the region

Sino-French Peninsula Town is encircled by Houguan Lake on three sides. The water quality of the lake is currently mildly to moderately eutrophic, with the existing water quality classified as Class V for surface water[6], falling short of the management goals of Class III[7] for Houguan Lake. Some sections of the ecological lakeshore have been eroded. Within the town, existing villages, farmland cultivation, and pond-based fish farming contribute to both non-point source and point-source pollution. Due to long-term fertilization and feeding associated with fish farming, the water quality in the ponds has deteriorated to Class V for surface water. Moreover, there is a lack of water exchange between the ponds, and insufficient hydrodynamic forces, resulting in almost no self-purification capacity.

Third, habitat fragmentation and biodiversity degradation are pressing concerns

While Sino-French Peninsula Town features a large expanse of green space, it is primarily dominated by cultivated land including nurseries, vegetable fields, and orange groves. The area also contains some forested regions, shrublands, and grasslands, each with varying levels of coverage. The forest canopy density is below 30%. The region is rich in water resources and lies along an important bird migration corridor. However, the area's ecological vegetation types and habitats are limited and mainly consist of wetlands. The existing habitats and ecological resources have not been effectively protected, hindering the area's ability to support species dispersion, migration, and exchange. As a result, the food chain for both flora and fauna remains incomplete, leading to a loss of biodiversity, low resilience, and poor stability in terms of ecological resistance and recovery. The structure of the ecological corridor and the integrity of the ecosystem urgently need restoration.

Class V for surface water:
Environmental Quality Standards for Surface Water (GB3838 –2002) is applicable to surface water areas with use functions such as rivers, lakes, canals, channels, and reservoirs within the territory of the People's Republic of China. According to the classification and protection goals of surface water environmental functions, it stipulates the items and limits that should be controlled for water environment quality, as well as the implementation and supervision of analysis methods and standards for water quality items.
Among them, Class V water is suitable for agricultural water-using areas and waters requiring general landscape requirements, and used for landscape and entertainment and for beautifying the environment.[6]

Class III water quality management goals of Houguan Lake:
To protect and improve the surface water environment of Wuhan City, Classification of Surface Water Environment Functional Areas in Wuhan City (E.Z.B. [2000] No. 74) was formulated, which is applicable to surface water areas with use functions including major rivers and lakes (reservoirs) in Wuhan City. Among them, the due water quality functional category for Houguan Lake is Class III.[7]

Fourth, the quality of the lakeside landscape is poor, and public spaces lack vitality.

Although Sino-French Peninsula Town has a strong foundation of green resources, primarily featuring a typical lakeside farmland landscape, the area lacks a cohesive ecological landscape framework. Scattered villages, farmlands, vegetable plots, and ponds are dispersed throughout the region, and the internal green and blue spaces, such as parks and ponds, are poorly connected to the surrounding areas. The lakeside landscape around Houguan Lake is of low quality, and the area lacks public vibrancy, reflecting the overall issue of “being near water without engaging with it, and being close to green spaces without connecting to them”.

Figure 62: Present Status of theSino-French Peninsula Town

6.2

Opportunities for Regeneration

The United Nations' Sustainable Development Goals set new standards for creating inclusive, safe, resilient, and sustainable cities. These goals require China to tackle a range of urban development challenges by offering systematic solutions across social, economic, environmental, and cultural dimensions, while also balancing urban growth with ecological preservation. Currently, China's urbanization has transitioned from incremental development to a new phase focused on stock regeneration. In this context, urban regeneration initiatives and the promotion of new infrastructure construction have become central to the transformation of urban spaces.

Sino-French Peninsula Town in Wuhan actively embraces the principles of ecological civilization and sustainable development, addressing global challenges such as climate change and environmental protection. It explores innovative models of low-carbon ecological demonstration and aims to improve livability in urban construction. The town seeks to resolve the conflict between residents' aspirations for a better quality of life and the need for urban ecological protection during the urbanization process. As the first low-carbon ecological demonstration pilot zone within the Sino-French Wuhan Ecological Demonstration City, Sino-French Peninsula Town seizes the opportunity to focus on the regeneration and upgrading of new infrastructure as a key driver of high-quality urban development. This initiative provides a comprehensive solution to improve regional infrastructure and enhance ecological protection. Not only does this approach raise the quality and standards of supporting infrastructure, but it also strengthens the city's resilience and its capacity for disaster prevention and mitigation.

Figure 63: Sino-French Peninsula Town After the Regeneration

Core Concepts

In contrast to traditional urban infrastructure, which primarily addresses flooding and pollution through gray networks and artificial treatment facilities, the sustainable regeneration of new infrastructure advocates for the harmonious coexistence of cities and nature. This approach, which integrates ecological protection and restoration under the concept of "building in harmony with nature", utilizes low-cost, low-impact engineering solutions. These measures offer natural solutions for both regional ecological protection and flood control, while also addressing pollution treatment infrastructure. By enhancing urban resilience and safety, restoring the ecological foundation and system integrity of cities, and improving their capacity to resist risks, this model achieves a seamless fusion of urban development with ecological preservation and spatial utilization.

Sino-French Peninsula Town in Wuhan is actively exploring the "Wuhan Standard" in ecological construction, proposing a concept of new infrastructure regeneration. This vision emphasizes the coexistence of cities and nature, with ecological protection and restoration at its core. The regeneration strategy prioritizes natural infiltration and ecological sharing, aiming to regenerate new infrastructure in lakeside areas with ecological resilience, and to establish an urban ecological safety framework centered around water. This approach seeks to convert ecological resource advantages into tangible green development benefits for the city.

The project leverages the unique advantages of its lakeside location by preserving existing ecological resources through small-scale -renovations. It introduces functions such as ecological restoration, safety resilience, environmental management, and waterfront space utilization, thereby endowing the site with new capabilities. Guided by the principles of "minimal disruption, lowest cost, highest standards, and optimal ecology", the regeneration strategy embraces concepts of "high eco-resilience, safety risk prevention, zero pollution increment, and spaces that promote interaction"." It focuses on fully protecting and utilizing the site's original water network and resource endowments, prioritizing the identification and preservation of ecological spaces to establish a water-centered ecological safety protection framework. Within these spaces, existing rivers, wetlands, ponds, and low-lying areas are interconnected and transformed through micro-renovations into natural water networks and lakeside wetland chains. This system integrates drainage, water storage, and pollution purification functions into an eco-friendly drainage and purification system, all without pipelines. Moreover, urban ecological landscape features are incorporated, allowing for natural infiltration from external ecological spaces to create multidimensional waterfront public spaces. The plan aims to restore urban ecosystems, enhance urban resilience and safety, continuously improve the urban environment, and achieve balanced development between people and the land. Ultimately, the goal is to create a low-impact ecological demonstration town that harmonizes with the natural environment and showcases the distinctive features of the lakeside.

Key Measures and Achievements

High Ecological Resilience – Ecological Protection and Restoration Plan
Safety Risk Prevention – Urban Resilience Drainage Plan
Pollution Zero Increase – Environmental Pollution Control Plan
Spatial Facilitation for Interaction – Urban Public Space Exploration

5.4.1 High Ecological Resilience – Ecological Protection and Restoration Plan

In the current urban development model, which prioritizes regeneration of the available resources and ecological transformation, the traditional approach of merely revitalizing the physical space of the built environment is no longer adequate to address the complex challenges of urban ecological sustainability. The goal during this phase of stock regeneration is to foster the integrated development of urban living spaces and ecosystems. This involves identifying and creating ecosystems and habitats that not only regenerate the built environment but also restore urban biological habitats. In doing so, a model for ecological resilience regeneration is being developed. This approach aims to create a comfortable living environment that meets the growing demands of urban residents for a higher quality of life, while also restoring the habitat functions of the built environment. It enhances urban ecological diversity, promotes biodiversity, and minimizes the environmental impact of urban regeneration projects on local ecosystems.

Systematic Restoration: Building an "Eco-space Framework of Natural Infiltration and Water-Land Interweaving"

The unique site characteristics of "three sides facing the lake, surrounded by ponds, and the turtle-back-curve extension" are preserved, and the topographical features of "higher in the north, lower in the south, lakeside lowlands, and central hills" are maintained. In line with the principle of "optimal ecology", existing lakes, ponds, wetlands, rivers, ditches and other ecological resources are identified as the foundational elements of the urban ecological space. An "urban-to-nature" ecological restoration strategy is implemented, integrating diverse plant and animal communities, linking large and small ponds to form ecological conservation corridors, and innovating the lakeside finger-like shoreline transformation to extend the ecological space. The urban ecological space serves as a flexible medium that gradually transitions from urban to natural environments. Through this approach, the urban interface extends outward toward the natural environment, while the ecological space infiltrates inward, resulting in a dual-direction spatial integration. This framework creates an ecological space system characterized by natural infiltration and the interweaving of land and water.

Figure 64: Spatial Structure of Sino-French Peninsula Town

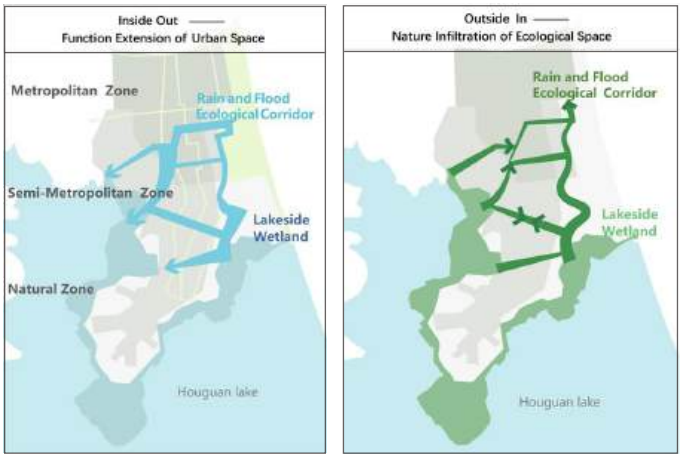

Figure 65: Integration of Urban and Ecological Spaces

Ecological Weaving: Restoring Wildlife Migration Corridors and Habitats

Based on an ecological diversity baseline survey of the site, the area is situated along a major bird migration corridor, with relatively good habitats at the peninsula's head and several scattered important bird habitats. However, biodiversity degradation is evident. By integrating habitat surveys, topographical variations, proximity to urban development zones, and other factors, the locations of biological habitats are identified using the principle of minimal-cost pathways. The goal is to preserve the existing high-quality bird habitats while maximizing the expansion of plant and animal habitats, thereby establishing an ecological protection barrier. To meet the specific needs of various bird species, local habitat improvements are made by utilizing the dredged silt from pond embankment demolitions and sediment removal to create slight topographical modifications. This results in the creation of seven distinct habitat types: independent ponds, dynamic mudflats, herbaceous marshes, wetland meadows, terrestrial forests, streamlets, and isolated islands. These efforts help connect regional green spaces, lakes, and mountain reserves, promoting the protection and restoration of biodiversity.

5.4.2 Safety Risk Prevention – Urban Resilience Drainage Plan

Resilience and safety are the cornerstone of urban regeneration, serving as a critical safety baseline for the renovation and upgrading of infrastructure in lakeside areas. Considering the unique location characteristics of the lakeside zone in Sino-French Peninsula Town, the project leverages the water network system as a key link between natural watersheds and urban development. From the perspective of watershed safety management and integrated urban development, the project aims to identify systemic solutions. This initiative introduces innovative urban stormwater management by exploring a pipe-free ecological drainage model and reconstructing the natural water network. It fundamentally addresses the risks of waterlogging and inadequate urban resilience within Sino-French Peninsula Town.

Organized Structure: Establishing a Natural Water Network System with River Channels and Wetland Islands

Focusing on resilient development, this project introduces innovative stormwater management and regeneration strategies, while respecting the natural drainage patterns of the site. Using stormwater modeling software, a 100-year rainfall simulation was conducted for the current site conditions, identifying low-lying ponds and four potential stormwater runoff corridors within Sino-French Peninsula Town as key areas for water storage and drainage. The traditional gray infrastructure drainage system is phased out in favor of utilizing the region's natural topography. Low-lying ponds, stormwater runoff corridors, rivers, ditches, and wetlands are interconnected to form a three-tier, pipe-free ecological drainage system: source sponge, midway water network, and terminal wetland. This system creates a natural water network, with river channels surrounding islands and wetlands encircling islands, enabling efficient rainwater discharge under various rainfall scenarios. The approach significantly enhances the region's ecological retention and drainage capacity, improving flood control standards to a 100-year return period. It delivers low-cost, high-resilience stormwater management, strengthening the city's ability to withstand and mitigate extreme weather events.

Within Sino-French Peninsula Town, the natural water network spans 8 kilometers, with wetland storage capacity reaching 600,000 cubic meters. The water surface area ratio has increased from 15% to 27%, and green space coverage now stands at 41.8%.

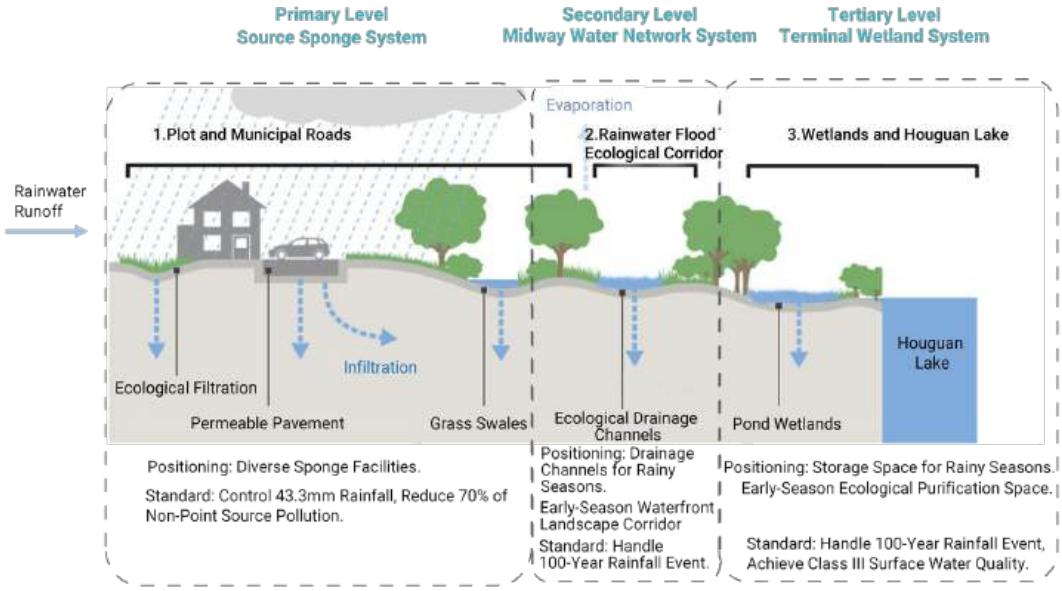

Figure 66: Schematic Diagram of Pipe-free Ecological Drainage System

5.4.3 Pollution Zero Increase – Environmental Pollution Control Plan

Process Control: Building an Ecological Barrier for Pollution Interception

With the goal of achieving "zero incremental pollution" in the watershed before and after urban regeneration, and ensuring that the water quality entering Houguan Lake meets at least Class III surface water standards, this project focuses on addressing urban point-source pollution and the pollution from initial stormwater runoff, while addressing gaps in environmental infrastructure. Capitalizing on the opportunity provided by urban regeneration, the project aims to improve the regional point-source wastewater collection system and enhance the city's ability to collect and treat domestic wastewater, ensuring comprehensive collection and treatment across the region. Additionally, the project leverages a pipe-free ecological drainage system to establish a multi-tiered wastewater interception and purification network, with an emphasis on controlling non-point source pollution. Through the integration of source sponge systems, midway linear water networks, and terminal lakeside ecological conservation belt, the project seeks to minimize the impact of urban regeneration on the water quality of the lakeside water network. The ultimate goal is to create Wuhan's first "zero-pollution-increment" town, contributing to the city's carbon reduction and emission mitigation efforts.

Figure 67: Schematic Diagram of the Multi-stage Ecological Pollution Interception and Purification System

Ecological Circulation: Building a Wetland Chain Purification System Around the Lake

Aligned with the concept of “Nature-Based Solutions (NBS)”, this project aims to achieve water quality in the terminal lakeside conservation belt that meets Class III surface water standards. A wetland area of at least 30 hectares will be developed. The existing 34-hectare pond area will serve as the foundational wetland base. Adopting a “preserve - break - integrate” approach, the project will involve minor topographical adjustments, the removal of pond embankments, localized dredging, and the creation of diversion channels to connect the ponds in a continuous chain. Two wetland purification chains, each approximately 4 kilometers long, will be established on the eastern and western sides of the lakeside conservation belt, effectively reducing 70% of the non-point source pollution generated by the peninsula. The wetland purification system consists of three primary zones: the enhanced treatment area, the ecological purification area, and the natural conservation area, collectively achieving “zero incremental” pollution for Houguan Lake. To optimize the purification efficiency of the wetland chain and enhance the hydrodynamics of the water network, an ecological water engine will be constructed, taking advantage of the natural north-south topography. This system, combined with ecological water replenishment through the wetland chain and tiered cascading water flows from north to south, will significantly enhance the overall circulation and purification capabilities of the peninsula's water network.

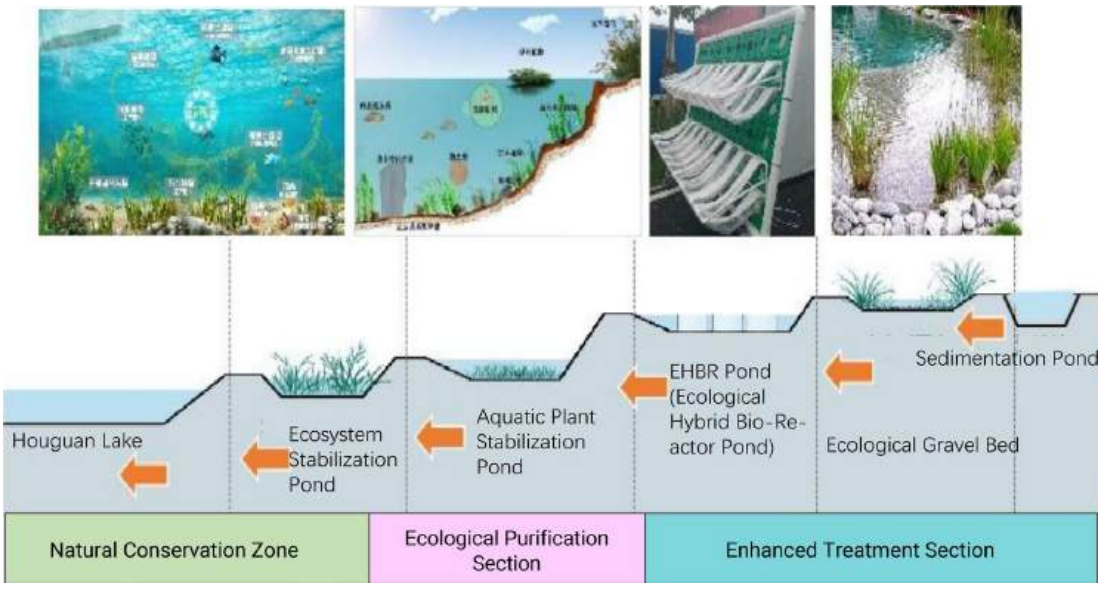

Figure 68: Schematic Diagram of Lakeshore Wetland Chain Purification Path

5.4.4 Spatial Facilitation for Interaction – Urban Public Space Exploration

Developing waterfront public spaces is a key strategy for urban regeneration. By integrating ecological resources and landscapes, urban functions such as leisure, recreation, cultural landscapes, and lakeside access are seamlessly embedded within the ecological space. This approach promotes the blending of urban and natural elements, enriching the city's landscape and vitality, highlighting its cultural character, and fostering a harmonious coexistence between people and nature in Sino-French Peninsula Town.

Functional Integration – Creating Multi-Dimensional Waterfront Public Spaces

Building on the reuse of ecological elements and the concept of a healthy city, this project seeks to maximize the ecological landscape benefits, creating a sustainable natural and social environment. Leveraging the existing natural wetlands at the site's periphery, which gradually merge into the urban fabric, the design follows a near-natural approach. By integrating natural ecology with urban functions, the project revitalizes public spaces, promoting vitality. While addressing drainage needs, it preserves the meandering forms of rivers and wetlands, the natural ecological shorelines, and habitats dominated by native vegetation. The design incorporates functions for leisure, sports, outdoor recreation, and water access, while embedding cultural elements to establish a water culture corridor. It also develops innovative, culturally rich landscape nodes. The project will create an integrated lakeside ecological park, blending natural river corridors, diverse waterfronts, greenways, and cultural landscapes. This harmonious fusion of urban, ecological, and natural spaces will enhance the city's landscape, waterfront vitality, and cultural character, achieving a balanced coexistence between people and nature in Sino-French Peninsula Town.

Zero-carbon Transportation – Establishing an Ecological Pedestrian System

Promoting a zero-carbon transportation concept, Sino-French Peninsula Town encourages low-carbon and environmentally friendly public transport. Existing lakeside walkways are preserved and transformed into wetland pathways, connecting with the Houguan Lake greenway system and the town's internal pedestrian network. A three-tier ecological pedestrian pathway system is actively woven together—comprising "main greenway, pedestrian pathway with recreational elements, and main recreational pathway" routes. This system effectively connects key public buildings, public spaces, and transit stations, enhancing the connection between the waterfront and surrounding areas, while increasing the walkability and accessibility of these spaces to the water.

Figure 69: Cross Section of the Main Commuting Greenway

Figure 70: Rendering of the Main Commuting Greenway

Figure 71: Cross Section of the Pedestrian Pathway with Recreational Elements

Figure 72: Rendering of the Pedestrian Pathway with Recreational Elements

Figure 73: Cross Section of the Main Recreational Pathway

Figure 74: Rendering of the Main Recreational Pathway

Figure 75: General Layout of the Ecological Water Networks of Sino-French Peninsula Town

6.6

Highlighted Project – The Lakeside Ecological Conservation Belt of Sino-French Peninsula Town

Project Overview
Functional Positioning
Design Strategies
Main Content

5.5.1 Project Overview

The Lakeside Ecological Conservation Belt of Sino-French Peninsula Town is situated at the southernmost tip of the town, covering a total area of 49.26 hectares, with 27.31 hectares of land and 21.95 hectares of water. The project fully respects the natural environment by preserving the large, contiguous water bodies through small-scale renovation. Ecological techniques such as super sponges, diverse habitats, and resource recycling have been employed, highlighting nine key features: wetland chains, finger-like shorelines, underwater forests, bionic barriers, willow-shoreline stabilization, cedar-forest heron habitats, habitat corridors, low-carbon materials, and zero-waste construction. The project has created three scenic zones"Linyin" (Whispering Woods), "Fanhua" (Floral Wonderland), and "Xingye" (Starry Wilds)—reconstructing Wuhan's first sustainable wetland conservation belt that seamlessly integrates nature and functionality. This was achieved through the principle of "large green areas for habitat, high aesthetics for landscape, and deep cultural connotations for ambiance". The design fosters an environment where grass flourishes, fish thrive, birds are attracted, and islands remain stable. The result is a natural park at the river's edge, where clear waters, green shores, fish swimming in shallow pools, lush aquatic plants, and herons calling from the grasses create a serene, untamed beauty. Since the completion of the project, bird populations in the surrounding area have increased by 40%, with sightings of rare species such as black-winged stilts, egrets, moorhens, and Diplazium esculentum (water fern).

Figure76: Bird's View of Lakeside Ecological Conservation Belt After the Renovation

Figure77: Photos of Key Nodes of Lakeside Ecological Conservation Belt

This project was selected as a demonstration project at the 14th Meeting of the Conference of the Contracting Parties to the Ramsar Convention on Wetlands in 2022. It has also become a model for ecological protection and environmental enhancement within the Sino-French Wuhan Ecological City.

Figure78: General Layout of the Lakeside Ecological Conservation Belt

5.5.2 Functional Positioning

The Lakeside Ecological Conservation Belt serves as the terminal wetland section in a three-tiered, pipe-free ecological drainage system consisting of source sponge areas, midway water networks, and terminal wetlands. It fulfills three primary functions: water retention and purification, ecological conservation, and habitat display.

5.5.3 Design Strategies

The project preserves the natural landscape and establishes a lakeside wetland chain system to achieve "zero pollution". It introduces innovative finger-like shorelines that mimic natural habitat succession, enhancing the resilience of these habitats.

It promotes the harmonious coexistence of humans and wildlife, creating an ecological transportation network with minimal disruption. By making diverse use of the limited available land, the project fosters an eco-sharing space that encourages interaction and collaboration.

Figure79: Bird's View of the Lakeside Ecological Conservation Belt

5.5.4 Main Content

First, Establishing a Circulating and Controllable Lakeside Wetland Chain

Guided by the principles of “minimal disruption and lowest cost”, the project employs four key strategies—connectivity, regulation, purification, and activation. It preserves the existing contiguous ponds as the spatial foundation for the wetland chain, aligning with natural drainage patterns and carefully managing vertical elevation to transform isolated water bodies into interconnected ones. The project fully leverages the wetland chain’s substantial capacity for water regulation and storage and graded and resilient stormwater management across different rainfall scenarios. It integrates water quality purification measures such as gravel sedimentation basins, enhanced coupled biofilm reactors, and wetland water retention bubbles. Two wetland purification chains and one ecological water replenishment pathway are developed, boosting the peninsula’s water purification capabilities under moderate rainfall and enhancing the hydrodynamic performance of the natural water network.

Figure80: Photo of Sino-French Peninsula Town After Renovation

Second, Innovating Finger-like Shorelines to Rebuild Perceptible, Interactive, and Ecologically Complete Spaces

Unlike the traditional method of dredging and transporting silt from ponds, the embankment reconstruction in the lakeside ecological conservation belt repurposes locally removed dike material and dredged silt to form miniature ecological islands. Within the wetland water network, slight topography renovation is employed to create an innovative finger-like shoreline model, which extends habitat boundaries and strengthens shoreline resilience. This "finger-like shoreline serves as an ecological engine, providing abundant food for birds, mammals, and amphibians, while enhancing the wetland's purification and habitat functions. Three core habitats are established, including deep pools, shallow shoals, ecological islands, and purification ponds. The existing wetland "resource pools" are expanded outward, extending habitats and fostering species interaction. This not only increases energy exchange within the site but also strengthens the integrity of the ecosystem and restores the ecological network.

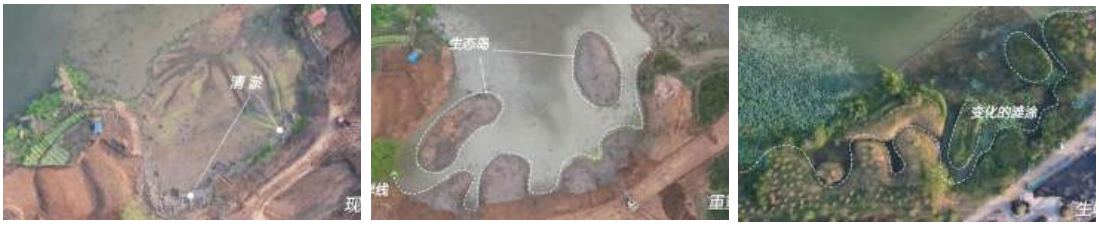

Figure81: Habitat Evolution of Finger-like Shoreline

Third, Establishing a Dynamic and Static Combined Ecological Slow-Traffic Network

Adhering to the principle of "minimal disruption", the project utilizes existing roads and lakeside embankments to create a multi-level ecological slow-traffic network without compromising the current ecological environment. This network includes a main greenway, a pathway with recreational elements, and a hiking trail. The main greenway extends 5 kilometers, connecting with surrounding municipal roads and the lakeside greenway to form the core slow-traffic infrastructure. The pathway with recreational elements links the lakeside water network with the main greenway, while transforming the existing embankments into three pedestrian loops. In biologically sensitive habitats and ecological zones, the design incorporates several "visible but inaccessible" areas and hiking trails, reducing human impact on wildlife while providing spaces and corridors for observing biodiversity.

Figure 82: Photo of the Main Commuting Greenway

Figure 83: Photo of Pathway with Recreational Elements

Figure 84: Photo of the Hiking Trail

Fourth, Creating an Ecological Landscape That Integrates City and Water with Distinctive Wetland Features

Drawing on the unique regional culture of Sino-French Peninsula Town and the distinctive characteristics of its wetlands, the project integrates functional elements to create themed scenic areas: the “Linyin” (Whispering Sound) Scenic Area characterized by its wetland landscapes and the local Zhiyin (soulmate) culture; the “Fanhua” (Floral Wonderland) Scenic Area with its seasonal blooms and vast fields of irises; the “Xingye” (Starry Wilds) Scenic Area focusing on holiday leisure and countryside camping. In conjunction with the surrounding land development, the design thoughtfully incorporates spaces for recreational activities within ecological buffer zones. In ecologically sensitive areas, spaces such as Wetland Soundscapes, Fog Gardens, and Leisure Bird-Watching zones are created, fostering symbiotic environments for humans, birds, and trees. These ecological shared spaces highlight a city image defined by natural permeability, shared ecology, and vibrant nature, establishing a landscape where urban and natural environments coexist, and people live in harmony with their surroundings.

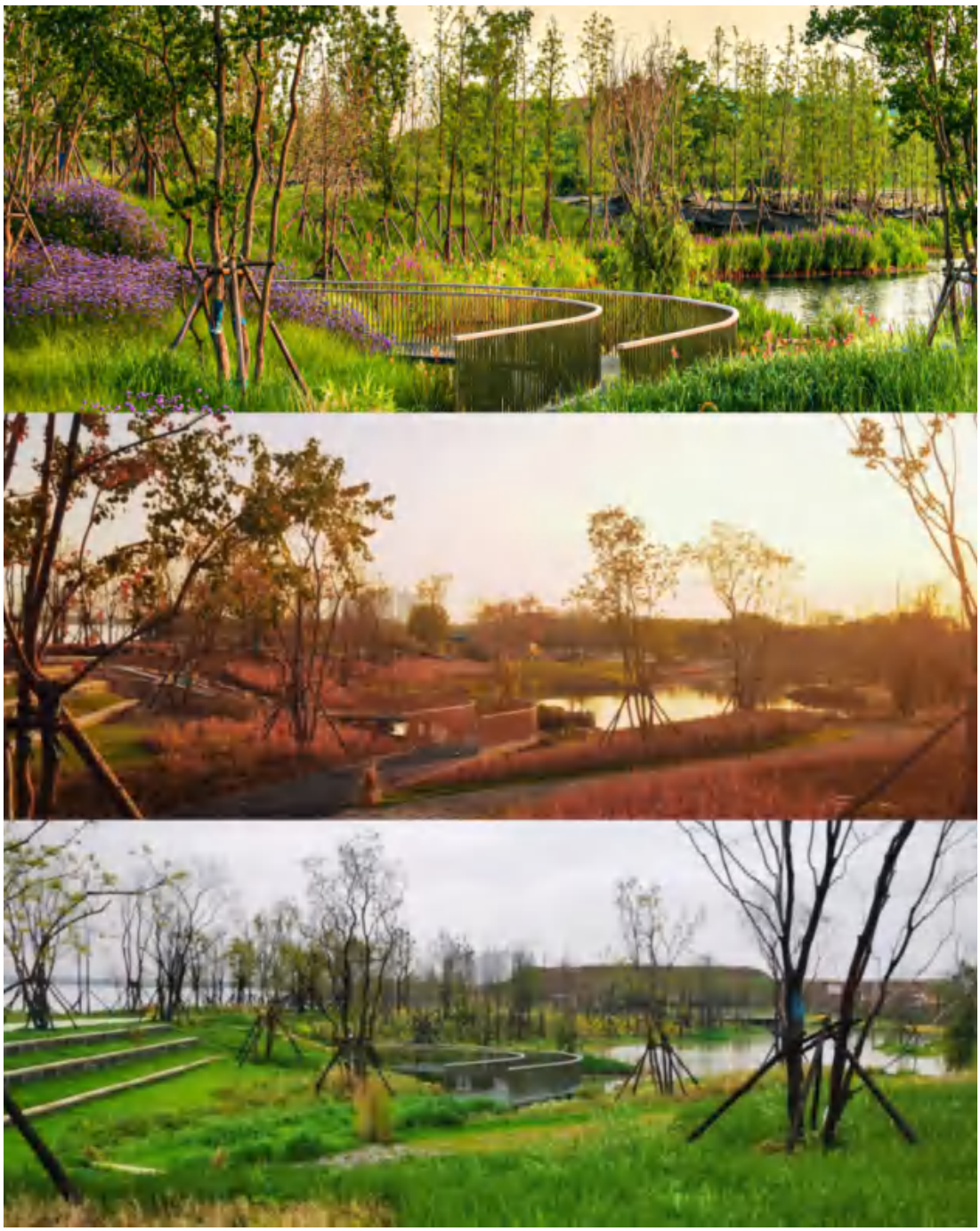

Figure 85 Seasonal Changes of “Cuiyuan Secret Realm” in the Fanhua Scenic Zone

Figure 86: Photos of the Key Nodes of Linyin Scenic Zone

Qingdao Road Cultural and Artistic Area

06

REGENERATION

6.1

Qingdao Road Cultural and Artistic Area — Capturing the Quintessence of Modern Wuhan and Tracing the Path of Urban Regeneration

Hankou Historical and Cultural Zone is one of Wuhan's most completely preserved areas to showcase the modern historical style, agglomeration of historical buildings, and distinct cultural heritages. Qingdao Road Block is an functional area with the most cultural and artistical deposits among the six areas within the Zone. Taking into account of the differentiated functional positioning of each area and the principles of urban regeneration, the Qingdao Road Cultural and Artistic Area has undergone refined and phased renovation, and developed a series of highlighted projects of urban regeneration represented by Wuhan Art Museum, Pinghe Packing Plant and Baoyuanli.

6.2

The Evolving Challenges of Urban Regeneration

During the Period of Rapid Urban Expansion, Wuhan Art Museum and Its Surrounding Areas Faced Severe Fragmentation of Functions and Spaces

During the Period of Major Urban Infrastructure Construction, the Qingdao Road Area Faced Issues of Spatial Structure Breakage and Cultural Ecosystem Destruction

Enhancement Period of the Current Urban Quality: Challenges of Restoring Appearance and Injecting New Functions in Areas like Pinghe Packing Plant and Baoyuanli

Among the second batch of national historical and cultural cities announced by the State Council, Wuhan boasts a historical heritage of 3500 years and shows profound cultural deposits. Hankou was opened as a commercial port in 1861, where Oriental civilization and Western civilization exchanged and collided. It contributed Hankou's urban transformation and this time node was regarded as the starting point of modern prosperity of Hankou. Hankou Historical and Cultural Zone has witnessed the city's modern and contemporary development and exemplifies the evolution of Hankou since it was opened as a treaty port.

The three landmarks—Wuhan Art Museum, Pinghe Packing Plant, and Baoyuanli—represent different historical stages of Wuhan's urban development. Each has responded to the theme of "urban regeneration" in its own unique way, offering varied approaches and solutions across different historical stages.

6.2.1 During the Period of Rapid Urban Expansion, Wuhan Art Museum and Its Surrounding Areas Faced Severe Fragmentation of Functions and Spaces

The area of Wuhan Art Museum was originally where the British Concession met the Chinese Jurisdiction, with Zhongshan Avenue, evolved from the old city wall of Hankou, cutting through the center of the area. To the north of Zhongshan Avenue was the Chinese Jurisdiction, and to the south was the British Concession. Located in the center of the area at the intersection of Huangshi Road, Zhongshan Avenue, Baohua Street, and Nanjing Road, occupying a traffic island, Wuhan Art Museum was converted from Hankou Jincheng Bank built in 1930. Jincheng Bank, designed by the architect Zhuang Jun, is considered a classic in Wuhan's modern architectural history.

After Wuhan was occupied in 1938, the Jincheng Bank building was occupied by the Japanese army and used as the headquarters of the Japanese Army Intelligence Department in Hankou. Following the victory of war in 1945, the building was returned to Jincheng Bank to resume business. In 1952, after the Bank was merged into a public-private bank, the building was transferred by the Wuhan Municipal Government and to be used by Wuhan Library. In 1957, it became the home of Wuhan Children's Library. In 2003, the Children's Library moved out of the bank building, and Wuhan Art Museum was under preparation. The evolution of Jincheng Bank into Wuhan Art Museum encapsulates and records the economic, political, historical, and cultural changes in modern and contemporary China.

Figure 87: Historical Photo of Jincheng Bank

Figure 88: Internal Facade of Jinchengli Before the Renovation

Status and Issues Before the Renovation

Prior to the renovation, Jincheng Bank had lost its former grandeur due to the passage of time. After the Children's Library moved out, the building was left vacant, and its interior functions had deteriorated. Meanwhile, the neighborhood of Jinchengli, primarily a residential zone, no longer met the standards of modern living conditions. Unregulated modifications made by residents to the historical buildings caused severe damage to their heritage. To restore the past appearance of the building, in 2005, the Wuhan Municipal Government decided to fully explore the historical value of these structures and invested 220 million yuan in their renovation and expansion. Within three years, the reconstruction into Wuhan Art Museum was completed. The new museum preserved the original architectural style while meeting the requirements of a modern art museum in functions and facilities.

6.2.2 During the Period of Urban Infrastructure Construction, the Qingdao Road Area Faced Issues of Spatial Structure Breakage and Cultural Ecosystem Destruction

With the development of the city, the protection of historical and cultural heritage and the revitalization of the old town have become urgent tasks. The Qingdao Road historical and cultural block is one of the four major historical and cultural areas designated in Wuhan's overall urban planning, and it represents one of the earliest constructed concession areas in Hankou, gathering a wealth of historical remnants. By the end of 2008, the completion of Yangtze River Tunnel and the construction of Wuhan Art Museum in the southwest corner of the site brought new opportunities for development of the area. To clarify the direction for the protection and development, the conservation planning for Qingdao Road historical block within the original concession zone of Hankou identified its boundaries: it is bordered to the north by Zhongshan Avenue, to the south by Yangtze River Avenue, to the east by Tianjin Road, and to the west by Nanjing Road, covering a total area of 17.75 hectares, and forming a contiguous area with the Art Museum.

Status and Issues Before the Renovation

Located within the former British Concession zone, Qingdao Road Cultural and Artistic Area is one of the earliest concession areas established in Hankou, as well as one of the regions in Wuhan with the largest concentration of modern architectures and numerous historical buildings. These outstanding historical buildings not only bear cultural details from different historical periods but also possess significant architectural artistic value, reflecting a variety of architectural styles and schools, thus forming an essential component of the cultural ecology of Wuhan's historical blocks. Qingdao Road Cultural and Artistic Area encompasses four communities of Tongfu, Tongren, Tongfeng, and Tianjin, with a total population of 5,522. Land use presents a diverse pattern, including residential, office, financial, entertainment, dining, hotel, warehousing, and educational functions, with residential land accounting for the largest of 51%, followed by financial offices and warehousing areas.

The century-old history has gradually diminished the former glory of the buildings on this historical block. Large-scale old town renovations have significantly affected the original historical appearance. Qingdao Road Cultural and Artistic Area currently has five protected cultural relics, seven outstanding historical buildings, and three lots of distinctive street and alley spaces. However, the traditional passive protection ways have led to stagnation in the development of the historical block, resulting in outdated infrastructure, poor living conditions, and a lack of vitality in the area. Additionally, a considerable number of historical remnants have been submerged among the newly constructed buildings, short of thorough protection and utilization. The construction of Yangtze River Tunnel has also affected the original urban fabric of this block and posed significant challenges for the protection and regeneration of the historical block. Addressing how to make up the spaces on both sides of the Tunnel, continue the existing urban fabric, protect the cultural ecology of the block, and regenerate the functions of cultural industry has become a key focus of the planning efforts.

6.2.3 Enhancement Period of the Current Urban Quality: Challenges of Restoring Appearance and Injecting New Functions in Areas like Pinghe Packing Plant and Baoyuanli

Pinghe Packing Plant was established in 1905, funded by the British firm owned by the Liddel brothers . Initially, it specialized in cotton packing, but later expanded to handle packing hides, feathers, ramie, and tea. Over time, the plant grew to manage the import and export of tung oil, lacquer, bristles, and Chinese medicinal herbs. During the following five decades, the facility was expanded into an industrial complex composed of seven buildings, covering a total land area of 8,182 square meters, with a construction area of 30,500 square meters.

Status and Issues Before the Renovation

Enduring 116 years of history, Pinghe Packing Plant transitioned from a packing plant and warehouse to a multipurpose leased space. However, prior to its renovation and restoration, the factory's main building facades suffered considerable damage due to weathering over the years. Prolonged multi-functional use and periods of abandonment led to the deterioration of various architectural elements, and the structural stability failed to support the new and diverse functions. In addition, various unauthorized structures built within the factory compound severely compromised the historical appearance of Pinghe Packing Plant complex.

Baoyuanli, located along Zhongshan Avenue between the west section of Nanjing Road and Huitong Road, borders Baohua Street in the east and Tai'anli in the west. Following the curved route of Baohua Road, it is about 600 meters away from Pinghe Packing Plant. Built in 1912, Baoyuanli was built at the start of the Republic of China, symbolizing a refresh new look of everything, which gains its name. The area has witnessed many significant historical events and has been home to notable historical figures. No. 9 of Baoyuanli played a crucial role in the peaceful liberation of Wuhan. Served as a secret command center for the underground Chinese Communist Party, it once was "Central China Economic News Agency". The renowned philosopher and thinker Xiong Shili resided at No. 12 Baoyuanli at some time in the past.

Baoyuanli is rich in architectural heritages, encompassing immovable cultural relics, outstanding historical buildings, and architectural landmarks that manifest the historical character of the area. From the building distribution, there are both distinct individual architectural heritage sites and clusters of buildings forming unique neighborhoods, highlighting a remarkable diversity in the overall urban spatial character. In terms of architectural quality, aside from the varying conditions of preserved heritage buildings, older residential areas are in urgent need of functional and quality upgrades, which are typical of dilapidated urban areas. Before the renovation, the total building area of Baoyuanli (including Tai'anli) was 27,700 square meters, of which 65% were certified buildings, while the remaining 35% were unauthorized structures, with rampant illegal construction. Prior to the renovation, the utilization of space in Baoyuanli was inefficient featuring a mix of functions. Many street-facing buildings were occupied by commercial establishments on the ground floor, with residential units above. Internally, the buildings mainly served as residences. The primary commercial activities included low-end dining and retail clothing. Despite being located at the node near Wuhan Art Museum on Zhongshan Avenue, which attracted significant cultural and tourism mass flow, there was a lack of supporting cultural tourism services and cultural creative enterprises.

Figure 89: Memorial Arch at the Portal of Baoyuanli Before the Renovation

Figure 90: Cornice Parapet of Baoyuanli Before the Renovation

Figure 91: Old Photo of Pinghe Packing Plant

6.3

Core Features of the Renovation Project

Wuhan Art Museum: Government-led, Revitalizing the Area through Cultural and Museum Functions

Qingdao Road Area: Collaborative Efforts to Lead Comprehensive Area Regeneration through Cultural Tourism and Creative Functions

Baoyuanli: Market-driven, Three-level Collaboration for Continuous Regeneration of Cultural Tourism Nodes

The regeneration projects of Wuhan Art Museum, Qingdao Road area, and Baoyuanli span close to 20 years, showcasing the transformation of urban regeneration models in Wuhan's historical and cultural zones across different historical stages. This transformation has progressed from the early government-led investment, construction and operation to a mid-phase model combining government leadership with market participation, and more recently, a market-led, ongoing regeneration model. Fueled by a series of catalytic projects, Hankou Historical and Cultural Zone has continually improved its chain of cultural museum, exhibition, cultural tourism, and cultural creativity industry, extending cultural and tourism routes and boosting its economic vitality and urban appeal.

6.3.1 Wuhan Art Museum: Government-led, Revitalizing the Area through Cultural and Museum Functions

Restoration of Historic Characters and Reconstruction of Functional Spaces

The renovation of Wuhan Art Museum focused on restoring the historical facades and replacing the function of the original buildings. By restructuring both old and new buildings and integrating spatially, the project created a contemporary space suitable for museum exhibitions and cultural activities. This approach provided a multifunctional carrier for art exhibitions, cultural exchanges, and library collections, combining modern functionality with a sense of historical authenticity.

Optimizing Building Structure and Enhancing Cultural Functions

Based on the preserved status of the original building, the project involved cleaning and restoring the facade of the former Jincheng Bank, maximizing its historical appearance by optimizing the internal structure. For Jinchengli, originally a residential area, only the street-facing facade was preserved, while the interior structure was completely rebuilt to meet the demands of the exhibition and museum office needs. This transformation has significantly enhanced the site's overall cultural functionality.

Investment-driven Development Showcases Cultural Confidence

The renovation of Wuhan Art Museum was completed with 220 million yuan of investment from the municipal government. This investment has strengthened Wuhan's cultural atmosphere, providing residents with a vital space for art appreciation and cultural participation. As a key node along Zhongshan Avenue, the project also involved a redesign of the South Plaza during its renovation in 2014, adding art installations and creating an open, fluid pedestrian space. This has reflected the city's commitment to preserving and reutilizing historic buildings, underscoring a strong sense of cultural confidence and responsibility.

6.3.2 Qingdao Road Area: Collaborative Efforts to Lead Comprehensive Area Regeneration through Cultural Tourism and Creative Functions

Coordinated Planning and Implementation for a Comprehensive Block

The goal of the Qingdao Road renovation project is to transform the area into a comprehensive historical and cultural block that integrates recreation, leisure, and culture. This large-scale investment not only reflects the government's strong will for the project but also showcases a systematic planning and implementation strategy. Throughout the renovation, the project emphasizes multi-stakeholder collaboration, integrating surrounding cultural and commercial resources to create a space rich in artistic and cultural taste. This collaborative mechanism ensures the smooth progress of the project and maximizes the value of the site.

Preserving Cultural Heritage and Continuing Historical Character

The regeneration plan for Qingdao Road is based on a deep exploration of the regional cultural context, focusing on protecting individual historical buildings while controlling the overall historical character and spatial texture. The planning is based on preliminary functional planning researches, with an overall consideration of the functional positioning of the historical cultural area. This approach avoids the decline of the area resulted from a singular protective strategy, invigorating the area and ensuring the sustainable development while maintaining the unique cultural property during the regeneration process.

Integrating Cultural Tourism Development and Promoting Industrial Upgrading

The renovation of the Qingdao Road block is not merely a simple urban regeneration project. It also fosters the development of emerging tourism formats through the integration of culture and tourism. For example, the introduction of the "Zhiyin Cultural Tourism Card" by Wuhan not only provides more convenience and discounts for citizens and tourists, but also further activates related industrial chains, promoting regional economic prosperity and development. This initiative boosts the long-term development of the area, injecting new vitality into the city's economic dynamism.

Platform-Driven Operation to Advance Project Implementation

A key project within the Qingdao Road area—the renovation of Pinghe Packing Plant— relies on functional planning as a prerequisite. Through the approach of "mending the gaps in the texture, restoring relics, integrating areas, and consolidating functions", this project transforms traditional industrial buildings into modern cultural, creative, and commercial spaces. Taking advantage of major infrastructure construction (Yangtze River Tunnel), the project, led by a district-level platform, involves professional park operators responsible for investment promotion and operational maintenance. By establishing a complete process chain for the regeneration and transformation of historical buildings, it ensures a seamless implementation from planning and construction to operation, achieving successful reutilization and functional conversion of industrial heritage.

6.3.3 Baoyuanli: Market-driven, Three-level Collaboration for Continuous Regeneration of Cultural Tourism Nodes

Collaborative Advancement through Three-Level Linkage

The urban regeneration of Baoyuanli is spearheaded by Wuhan Culture Tourism Group, collaborating with various stakeholders, including the government of Jiang'an District to propel the project. This approach closely integrates land-level primary planning, secondary development, and tertiary operations. Through coordinated planning, it not only addresses current development and operational needs, but also emphasizes the asset value upon operation completion, positioning it as a source of long-term revenue. This strategy aims to achieve a sustainable urban regeneration goal characterized by "comprehensive balance, dynamic balance, and long-term balance", thus laying a solid foundation for the ongoing development.

Introducing Cultural Tourism Formats to Enrich Functional Content

The Baoyuanli regeneration project is guided by multi-faceted cultural and artistic themes, coupled with the introduction of cultural tourism elements to enhance the regional functionality. By transforming isolated historical buildings into key nodes along a premium cultural tourism route, the project significantly boosts the cultural and tourism synergy in the region. With Wuhan Art Museum (Hankou Branch) positioned as the core of cultural exhibitions, Baoyuanli' relying on the artistic industry chain, an "Art +" industrial ecosystem is built, increasing the scale of public functions—such as exhibition, commerce, and services—from 30% to 43%.

Market-Driven Regeneration to Create New Cultural Tourism Nodes

The Baoyuanli regeneration project is primarily market-driven, utilizing a three-level collaborative model among municipal, district authorities and operational entities to facilitate continuous regenerations in the area. This approach ensures steady progress in establishing new nodes along the cultural tourism route. The project not only enhances the integration and utilization of cultural tourism resources, but also achieves sustainable development of cultural tourism functions through reasonable operational planning. Consequently, Baoyuanli is positioned as a vital support for cultural development in Wuhan and a driving force for the regional economic vitality.

6.4

Leading and Accompanying: Exploring the Evolutionary Path of Planning in Historical and Cultural Zones

Implementing Comprehensive Planning, Cluster Design, and Customized Strategies for Historical Areas – Qingdao Road Block
Strategies for Enhancing the Physical Space, Transforming Functions, and Creating Distinctive Experiences and Trendy Tourism Destinations for Wuhan-Style Architecture – Wuhan Art Museum and Baoyuanli
Industrial Buildings Transformed Through Artistic Renovation and Integrated Operations, Creating Spaces for Innovation and Entrepreneurship—Pinghe Packing Plant and Pinghefang Plot

6.4.1 Implementing Comprehensive Planning, Cluster Design, and Customized Strategies for Historic Areas - Qingdao Road Block

As early as 2007, a comprehensive protection and utilization plan was developed for the entire 17.75-hectare Qingdao Road area. The plan adopted strategies such as “mending the gaps in the texture, restoring relics, integrating areas, and consolidating functions”, innovating methods for protecting and controlling the historical style of the area. Customized functional planning was introduced for each plot, and strategies to enhance implementation mechanisms were strengthened.

During the regeneration of the Qingdao Road area, a cluster design approach was applied to the key historical buildings in the block, with different measures implemented based on classification. This led to effective preservation outcomes. For example, the former site of Shengjiao Bookstore was restored and repurposed, with its historical appearance faithfully recreated. It now serves as a cultural exhibition destination, showcasing the development of both the Qingdao Road block and Wuhan at large. Additionally, a relocation protective project was carried out for the main building of He Hengfu’s Yilu Residence, preserving the individual building while meeting the functional needs of the block’s overall regeneration. This has fully demonstrated the fundamental principle of “protection first, reasonable utilization” in the Qingdao Road block.

In the regeneration process of Qingdao Road, particular emphasis was placed on creating commercial spaces. The focus extended beyond physical space transformation to integrating cultural and commercial functions. By reshaping the block’s image and improving landscaping facilities, the project highlighted the unique atmosphere and historical charm of this Wuhan-style cultural commercial street, showcasing its regional and cultural characteristics.

Figure 92: General Layout Plan of Preserving the Qiangdao Road Block

6.4.2 Strategies for Enhancing the Physical Space, Transforming Functions, and Creating Distinctive Experiences and Trendy Tourism Destinations for Wuhan-Style Architecture - Wuhan Art Museum and Baoyuanli

Wuhan Art Museum, originally Jincheng Bank built in the 1930s, is a representative blending modern Western school architectural techniques and Wuhan-style architecture. The renovation and regeneration of Wuhan Art Museum embody the adaptive reuse concept of modern Wuhan-style buildings. The historical layout, characterized by the enclosed courtyard typical of Wuhan-style architecture, has been largely preserved. Different levels of adaptive reuse strategies were applied according to the protective classification of the buildings. The first-grade protected historical building of Jincheng Bank was restored to its original appearance with structural reinforcement, while the second-grade protected building Jinchengli retained its exterior walls and main structure. On the northern side, illegal constructions were demolished, and new structures were built to create a street-side park plaza, meeting the exhibition and visitor circulation needs. Through functional transformation and spatial remodeling, the Wuhan-style historical buildings have been revitalized, invigorating new cultural elments into the Hankou Historical and Cultural Zone.

Baoyuanli, located right across the street from Wuhan Art Museum, represents the largest renovation project of Wuhan-style alley neighborhoods in Wuhan's urban regeneration initiatives. Built in 1912, Baoyuanli is a meaningful milestone in the peaceful liberation of Wuhan and a prime example of modern Wuhan-style alley residential architecture in the Chinese jurisdiction. The urban regeneration project involves the comprehensive protective restoration of Baoyuanli, covering a total building area of approximately 19,800 square meters, including 55 historically protected buildings and the surrounding landscaping environment. The project adheres to the principle of "restoring the old was as before, preserving the original appearance", and advances the adaptive reuse of the alley area building by building, with meticulous attention to detail. This is achieved through the establishment of an expert think tank and the introduction of top-tier domestic and international commercial resources. The full-scale restoration of the historical buildings follows a technical process of "value excavation - protection requirements - restoration plan", incorporating architectural courtyards, architectural gap, and recessed spaces to create engaging tourist experiences and enrich spatial interaction. By focusing on the logic of stimulating the intrinsic development potential of the historical and cultural zone, the project emphasizes the restoration of the original spatial texture and spatial relationships of the historical buildings. Through the space reduced development, a large number of high-quality, interactive public spaces have taken shape, providing flexible venues for cultural exhibitions, artistic exchanges, and new consumption experiences across diverse industrial formats.

Figure 93: Planning Diagram of the Cultural Tourism Route for the Wuhan Art Museum Area (Baoyuanli, Xian'anfang, Pinghefang)

6.4.3 Industrial Buildings Transformed Through Artistic Renovation and Integrated Operations, Creating Spaces for Innovation and Entrepreneurship—Pinghe Packing Plant and Pinghefang Plot

Following the renovation of Pinghe Packing Plant, the renovation and construction of Pinghefang, as well as the investment promotion and operation, were initiated. The Former Residence of Lu Zi, built in 1913, was converted into the Jiang'an District Museum, while the Russian Orthodox Church in the northwest corner of the site, constructed in 1893, was preserved. These efforts have successfully turned Pinghe Packing Plant from a traditional industrial building into a creative space, attracting cafés, art galleries, and exhibitions, all showcasing the charm of an industrial style. Furthermore, Pinghefang has been positioned as a creative hub for Wuhan's fashion and cultural industries, as well as a popular destination for social media influencers.

Implementation Outcomes

The renovation of Wuhan Art Museum has transformed it into one of the city's most significant cultural facilities. In 2015, it was selected among the second batch of National Key Art Museums, with total visits exceeding one million. The venue is always packed on weekends and holidays, renowned as Wuhan's most important public cultural and art spaces.

Figure 94: : Bird's View of Wuhan Art Museum

The renovation of Pinghe Packing Plant on Qingdao Road received the UNESCO "2019 Asia-Pacific Award for Cultural Heritage Conservation". In 2018, it was grandly opened as the flagship project of "Hankou Cultural Creative Valley". The site now hosts over 100 enterprises specializing in digital creativity, industrial design, cultural creative products, and art bookstores, contributing significant economic stimuli to the surrounding area.

Figure 95: Bird's View of Pinghefang

The regeneration of Baoyuanli was officially launched in February 2024. Cultural artistic activities held spanning three important festivals—the Little New Year, the Spring Festival, and the Lantern Festival—ignited public interest and attention. The area has since lured influential brand commercial tenants, with street shops opening successively and injecting new vitality into the old district, invigorating the commercial value of Wuhan's old downtown.

Figure 96: Bird's View of Baoyuanli

Epilogue

07

EPILOGUE

WUHAN

As a growing “ ‘national central city”, Wuhan shoulders the dual missions of economic drive and transformative development, as well as enhancing both its urban capacity and quality. Faced with the increasing population pattern and limited urban space, urban regeneration has become a necessary means of releasing the potential of existing land and continuously optimizing the allocation of spatial resources. Over years of persistent exploration and practice, Wuhan has accumulated a series of urban regeneration projects with significant social benefits, formulating a set of effective strategies for urban regeneration. Moving forward, Wuhan is expected to explore innovative approaches in urban regeneration, striving tirelessly to create a more refined and human-centered “Exquisite Wuhan” and a “more competitive, sustainable world city”.

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