Study on the Construction Method of "Blue-Green Network" Pedestrian System in Public Spaces of Ancient Water Towns

Shuofeng Wang, Yule Fu
Gold Mantis School of Architecture, Soochow University, Jiangsu, China

Funding
Undergraduate Training Program for Innovation and Entrepreneurship, Soochow University, [Project No.202410285171Y].

Abstract: Against the backdrop of urban planning shifting toward stock renewal, China's ancient water towns—preserving relatively intact land-water layouts—offer significant potential for public space revitalization. However, these ancient water towns currently face macro-level challenges such as public space shortages, uneven distribution, and poor systemic integration, alongside micro-level issues like disorganized local environments and underutilized waterfronts. Transcending single-region limitations, this paper proposes a universal framework for constructing a "blue-green network" pedestrian system in water town public spaces, using the northern section of Suzhou's Pingjiang Historic District as a case study. Employing spatial syntax and POI kernel density analysis, the study establishes a quantitative method to scientifically delineate the slow-traffic framework; it also systematically summarizes spatial optimization strategies and standardized node modules for four typical street prototypes. This approach advocates for connecting points into a continuous, slow-traffic network to comprehensively enhance the quality of public spaces in ancient water towns, providing theoretical support and practical guidelines for similar revitalization efforts.

Keywords: Spatial syntax; Stock renewal; Historic districts; Blue-green network; Construction paradigm

1. Introduction

Against the broader backdrop of urban planning shifting toward the renewal of existing stock, improving the quality of public spaces has become a critical component of the urban renewal process. Many of China's ancient water towns have preserved their historic streets and the spatial layout where land and water coexist in relatively good condition, such as the Ancient City of Suzhou, Tongli Ancient Town, Nanxun Ancient Town, and Wuzhen. This is not only a key feature of their public space development but also a tangible means of preserving cultural heritage.

However, examining the current state of such ancient water towns, their internal public spaces often face a series of common challenges. At the macro level, these public spaces suffer from a shortage in total quantity, uneven distribution, poor quality, and a lack of systematic integration [1]. At the micro level, attractions within the old town are largely scattered in isolated clusters, lacking

linear connections between them, which results in a poor walking experience between sites; at the same time, the environment of some streets is cluttered, and the waterfront spaces have not been fully revitalized and utilized, undermining the continuity and comfort of waterfront walking. Against this backdrop, leveraging the advantages of the old city's "dual-grid" layout—where waterways and land routes run parallel, and rivers and streets are adjacent—to establish a continuous system of public spaces holds significant practical importance and serves as a key strategy for the sustainable revitalization of the ancient water town.

This study overcomes the limitations of single-case studies and aims to establish a universal paradigm for constructing a" blue-green network" of pedestrian systems in the public spaces of ancient water towns. This study employs spatial analysis methods, including spatial syntax and POI kernel density analysis, to propose an objective and quantitative approach for selecting pedestrian and bicycle routes. Building on this foundation, the design fully leverages the historic city's existing water network system and identifies landscape features. By integrating functional requirements at specific locations to create public space nodes, it connects scattered attractions and residential areas through a network of interconnected points, thereby forming a networked system of public spaces. This approach seeks to establish a networked system of continuous pedestrian to replace large-scale public spaces, thereby providing a standardized and replicable development framework and practical model for enhancing the overall quality of public spaces in ancient water towns.

2. Study Population

2.1 Selection of the Study Sample

To validate the effectiveness of this framework, it is necessary to select a historic water-networked neighborhood that is both representative and complex as a case study for empirical analysis. This study selected the ancient city of Suzhou as its primary subject of analysis because it has preserved to this day the dual-grid layout characteristic of traditional Chinese water towns, where land and water coexist, and streets run alongside rivers. In terms of the specific boundaries, the focus is on the northern section of the Pingjiang Historic District in Suzhou (bounded by Dongbei Street, Lindun Road, Xuanqiao Alley, and the Outer City Moat). Not only does it connect multiple major cultural attractions, but it also features a dense network of waterways and a high concentration of residents in the historic district. Compared to highly commercialized areas, this district has a relatively low concentration of commercial tourism; its streets, alleys, and public spaces are in good condition, and it offers tremendous potential for green landscaping, making it an ideal testing ground for developing a blue-green pedestrian and bicycle network.

2.2 Current Issues

Most ancient water towns have preserved their traditional spatial fabric and feature unique land-water layouts. Field surveys have revealed that the pedestrian public spaces within the study area primarily suffer from two issues: underutilization of landscape resources and poor connectivity of pedestrian routes. Based on the characteristics of the streets and alleys, the spaces can be categorized into four types: modern mixed-use roads, modern water-land parallel roads, traditional pedestrian-only alleys, and traditional water-land parallel roads. Each type presents distinct and prominent issues in the current context. While some peripheral greenways along major thoroughfares have succeeded in creating continuous waterfront spaces, the more abundant waterfront resources within neighborhoods often remain underutilized. At the micro-level, historical sites and attractions

are scattered in isolated pockets, lacking organic linear connections, which results in a poor pedestrian experience. Furthermore, many alleys and lanes are severely disrupted by the mixed flow of pedestrians and vehicles, and the underutilization of public facilities; the cramped and cluttered environment significantly diminishes the traditional character of these streets.

Table 1: Current Issues with Public Spaces in the Ancient City of Suzhou.

Road Type	**Modern Mixed-Use Roads**	**Modern Water-Land Dual-Use Roads**
Actual Scene		
Current Issues	Disorganized vehicle parking disrupts pedestrian flow, creating transit dead ends; street walls and green belts encroach upon sidewalks, reducing physical space and overall transit efficiency.	Narrow walkways are heavily cluttered with utility boxes, shared facilities, and personal items, creating extremely cramped spaces; unregulated ground-floor storefronts disrupt the historical texture and overall streetscape.
Road Type	**Traditional Pedestrian Alley**	**Traditional Land-Water Hybrid Roads**
Actual Scene		
Current Issues	Narrow walkways are severely cramped by electrical boxes, shared amenities, and personal clutter; unregulated ground-floor retail disrupts the historical fabric and overall streetscape.	The "river-street adjacent" landscape is underutilized; the lack of resting and interactive facilities limits the vitality and viewing experience of traditional water alleys.

3. Development of a Quantitative Evaluation Model for Blue-Green Network Pedestrian Systems

In the planning and renewal of public spaces in ancient water towns, traditional route selection often relies on subjective experience. To ensure the scientific rigor and coherence of the “blue-green network” pedestrian system, this framework proposes the development of a quantitative evaluation model based on multi-source data integration. Utilizing spatial analysis methods such as Space Syntax and POI kernel density analysis, the model objectively quantifies the physical spatial framework, functional needs of the population, and natural landscape characteristics. Through layered analysis, it establishes a standardized pathway generation framework.

3.1 Extraction of Road Network Values Based on Spatial Syntax

The ancient water town features an intricate “land-and-water parallel” dual-grid street layout.

To accurately quantify the potential traffic capacity and public activity potential of each street within this complex network, the research framework employs spatial syntax as a tool for evaluating the underlying physical structure.

First, based on the results of field surveys of the target ancient water town and its road network structure, the streets and alleys were assigned codes and numbers. Using software such as CAD, an axis-segment model of the spatial structure of the streets and alleys in the study area was created. The axis model was then imported into spatial syntax analysis software such as Depth map to establish an analytical model encompassing the study area and its expanded buffer zone. By conducting a building cluster analysis of the area, the road activity levels were determined [2]. Based on this, we focus on calculating centrality and pedestrian traffic potential using two indicators—selectivity and integration—within an 800-meter radius. The streets and alleys that score highly on both selectivity and integration form the backbone of the naturally emerging, most vibrant areas in this ancient water town, where pedestrian traffic is most likely to congregate.

In the empirical study conducted in Suzhou, the streets and alleys within the study area were first systematically coded and numbered based on field surveys and the road network structure, with north-south and east-west roads designated as H and S, respectively. Subsequently, the axis model was imported into Depth map, and a 500-meter buffer zone extending beyond the study area was established to conduct a structural analysis. By extracting the Choice and Integration indices within an 800-meter radius, the results clearly revealed that areas centered around major streets and alleys—such as AH1, AH8, AH10, AS6, AS9, and DH1—exhibit the highest potential for through traffic.

Figure 1: Spatial Syntax Analysis Model of the Street Network.

3.2 Calculation of Spatial Vitality Values Based on POI Density Analysis

POI data provides a clear picture of current population clustering patterns and functional needs. The development of a waterfront pedestrian system must closely align with people's actual lifestyles and consumption patterns.

To this end, POI spatial distribution data within the target area were comprehensively collected, focusing primarily on business formats highly associated with slow-traffic activities. These encompass various facilities, including catering, shopping, daily life services, sports and recreation, public facilities, transportation, healthcare, science and cultural education, scenic spots, and accommodation. Based on this, GIS software such as ArcGIS was used to conduct a POI kernel density analysis on the selected area and its buffer zone. By calculating the density distribution of

various types of facilities, the analysis visually identified the "functional hotspots" within the ancient city where human activity is most concentrated and service facilities are most densely clustered. Taking the Suzhou study area as an example, the highest density of various facilities in this area is concentrated primarily in the western and southern parts.

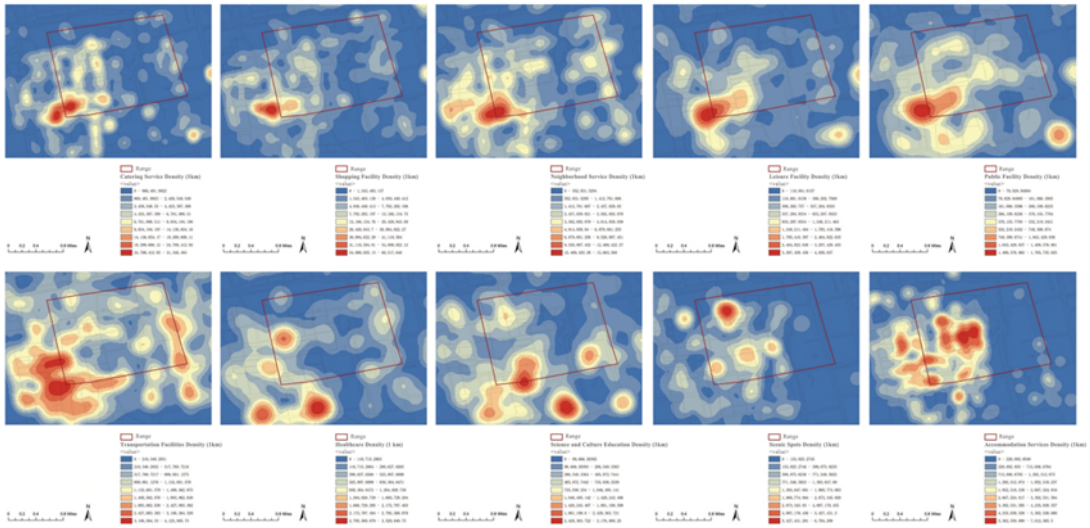

Figure 2: POI Kernel Density Analysis of Various Functional Facilities.

3.3 Multi-source Data Overlay and Generation of the Pedestrian and Bicycle Network

After quantifying the road network structure (spatial syntax) and spatial vitality (POI kernel density analysis), the final route generation for the blue-green network's non-motorized transportation system requires a comprehensive, multi-layered decision-making process.

By combining the high-activity streets and alleys identified through spatial syntax analysis with the high-facility-density zones indicated by POI density analysis, and overlaying these with existing public space shortcomings and the area' s waterfront landscape assets, we conducted a multidimensional layered simulation. Based on the results of this layered analysis, we selected segments that best connect high-vitality zones, high-functionality zones, and areas of high scenic value to establish the optimal pedestrian and bicycle routes. This route should effectively connect scattered attractions to provide visitors with a cohesive walking experience, while also covering the surrounding dense residential areas to serve residents' daily public activities.

This development model capitalizes on the natural topography of land and water to create a networked system of interconnected public spaces, thereby expanding the total volume and scope of public spaces and forming a structured network. Not only does this model effectively alleviate the conflict between visitor and resident activity spaces and address current issues such as the fragmentation of the scenic experience in the short term, but it also contributes to enhancing the livability of the historic city and optimizing its demographic structure in the long term.

Figure 3: Multi-Source Data Overlay Analysis for the Pedestrian Network.

Figure 4: General Layout of the "Blue-Green Network" Pedestrian System and Distribution of Node Modules.

4. Spatial Optimization Strategies for the "Blue-Green Network" Pedestrian System in the Ancient Water Town

The road network of ancient water towns is highly complex and exhibits distinct historical stratification. The blue-green pedestrian and bicycle network encompasses a variety of street and alley spatial forms, essentially covering the typical cross-sectional profiles found in historic districts. Adopting tailored design strategies for different street and alley spaces is key to ensuring the continuity of pedestrian and bicycle routes and improving the quality of the surrounding environment to enhance the user experience. This framework identifies four universal prototypes of water town alleyways and proposes standardized strategies for the renovation of linear spaces to address their common issues.

4.1 Spatial Segregation and Mixed-Use Development in Modern Mixed-Use Roads

In the outskirts or along the main thoroughfares of ancient water towns, mixed-use roads are commonly found. The core issue lies in the prominent mixing of pedestrians and vehicles, with motorized and non-motorized traffic significantly disrupting pedestrian activity. Compounded by disorderly landscaping and the haphazard placement of various idle facilities—which frequently encroach on pedestrian walkways—this results in overall low traffic efficiency.

To address these issues, the strategy advocates for the use of flexible boundaries and the separation of traffic flows to clearly demarcate non-motorized vehicle parking areas. By utilizing soft paving materials, mixed-use traffic flows are visually and functionally distinguished, prioritizing the continuity and safety of pedestrian and bicycle routes. At critical nodes where space is severely constrained, a multi-level spatial division strategy is employed. By constructing elevated walkways, the lower level accommodates intersection traffic or vehicle parking, while the upper level serves as a comfortable pedestrian passage and scenic platform, thereby significantly improving spatial efficiency within the limited land area.

In addition, the design emphasizes breaking through the boundaries of negative space, fully utilizing the corner spaces of mixed-use roads and the recessed areas of surrounding buildings to create rest areas. For example, the original surface parking lot has been converted into an underground garage, and enclosed courtyard walls have been opened up to transform them into pocket parks that serve the pedestrian and bicycle network. Through these targeted interventions, the

design improves the neighborhood' s pedestrian environment and the quality of public space.

4.2 Three-Dimensional Interaction and Waterfront Enhancement in Modern Water-Land Dual-Use Roads

Modern mixed-use water-land roads typically feature relatively open waterfront spaces, yet they commonly face the challenge of underutilized waterfront landscapes and lackluster pedestrian walkways. At the same time, maintenance facilities along the riverbanks often create visual obstructions and physical barriers, disrupting the continuity of waterfront walking and the experience of engaging with the water.

In response to this situation, the strategy proposes a vertical realignment of the site, incorporating a sunken pedestrian path to physically separate it from the bicycle lane. By installing soft paving in varying colors and materials and utilizing the natural elevation changes to create resting areas, the plan effectively bridges the physical and psychological distance between people and the water.

In terms of interface design, emphasis is placed on creating visual corridors and establishing connections across water bodies. The design advocates for waterfront walls that alternate between open and enclosed sections, incorporating landscaping and seating to foster a continuous, open atmosphere along the waterfront; In areas where water conditions permit, bridges can be constructed to connect the landscape lines on both banks, creating an excellent viewing experience for waterfront strolls and new nodes for slow-paced exploration and lingering. This transforms the waterfront space from a purely functional transportation corridor into a multifunctional public space that integrates recreation, sightseeing, and relaxation.

4.3 Landscape Management and Revitalization of Micro-spaces in Traditional Pedestrian Alleys

Traditional pedestrian alleys are an integral part of the fabric of ancient water towns, embodying rich historical memories and the vibrancy of daily life. However, their pedestrian spaces are often cluttered with public facilities such as electrical substations and shared power banks, as well as residents' personal belongings, resulting in cramped and disorganized environments. Furthermore, the lack of unified design and management of commercial facades undermines the overall character of these traditional alleys and detracts from the pedestrian experience.

The renovation strategy emphasizes the continuity of the urban fabric and the coordination of building facades, with the preservation of the traditional character of the streets and alleys as the primary principle, while ensuring ample space for residents to gather and interact. For paving, linear paving patterns consistent with the historic fabric of the old town are used to delineate pedestrian walkways, effectively mitigating various factors that might disrupt the walking experience. At the same time, a unified design language for commercial facades is adopted, and in conjunction with these facades, more interactive or restful spaces under the eaves are created to enhance the sense of place and encourage lingering in the streets and alleys.

Addressing the disorganized infrastructure, strategies of facility concealment and acupuncture-style interventions are adopted. Facilities such as utility boxes are masked using wooden frames to unify the facade language and mitigate visual impact. In terms of micro-space utilization, planter boxes are integrated to create landscape features, alongside convenient amenities like clothes drying racks. By leveraging the micro-spaces within the block to establish additional resting nodes, a progressive enhancement of spatial quality is achieved through precise "micro-acupuncture"

interventions.

4.4 Water-Oriented Redevelopment and Landscape Guidance for Traditional Land-Water Hybrid Roads

Traditional land-water hybrid roads possess immense potential for scenic value; their unique charm lies in the spatial characteristics where waterways and residential areas coexist side by side. However, there is currently a widespread lack of resting and gathering spots, making it difficult for pedestrians to enjoy a high-quality waterside experience or find suitable places to pause and admire the scenery.

The optimization of these streets and alleys requires fully leveraging the character of the waterways and utilizing existing infrastructure to develop waterfront spaces. In terms of environmental enhancement, the focus is on vertical greening and softening boundaries to improve the recreational and greening environment of the waterfront. This includes adding tiered flower beds and incorporating vertical waterfront steps—a modern interpretation of traditional wharves—to enhance guidance and accessibility for waterfront activities. In terms of interactive experiences, the proposal advocates for the integration of diverse interactive elements, optimizes the layout of recreational facilities in the waterfront area, adds two-way seating facing both the river and the street, and combines these with landscape greenery to create multifunctional activity zones.

For waterfront platforms with room for expansion, horizontal expansion can be pursued by installing stepping stones to provide more space for waterfront activities; or by adding scenic bridges over the water to connect traditional alleys with key public spaces, thereby blurring the boundaries between land and water. This will fully revitalize the public vitality of the water alleys, transforming traditional streets where land and water run parallel into waterfront spaces for leisurely strolls where people can walk, linger, and enjoy the scenery.

5. Module for Micro-Update Design of Node Spaces

In the "blue-green network" pedestrian system, a continuous linear framework must be activated by a rich array of node spaces to create an overall spatial rhythm characterized by a balanced interplay of density and openness. This paradigm follows the principle of “breaking the large into the small,” transforming traditional centralized large plazas into small nodes scattered at the intersections of streets, alleys, and waterways, thereby reducing implementation complexity and enhancing spatial permeability. Based on differences in spatial typologies and user behaviors, the paradigm identifies four categories of “plug-in” modules: water-oriented interaction, waterfront landscapes, pocket parks, and alleyway rest areas. These modules facilitate standardized deployment and adaptive application at locations along the pedestrian network that share similar spatial characteristics, thereby enhancing the replicability of design strategies and improving implementation efficiency.

5.1 Boundary Permeability and Vitality Stimulation in Waterfront Interactive Module

The soul of an ancient water town lies in its water. The waterfront interactive modules are designed to break down the barriers created by rigid flood-control embankments that hinder public activity, thereby reestablishing a close connection between people and water. Depending on the specific type of embankment, different waterside modules can be integrated to facilitate a transition from “living by the water” to “enjoying the water.”

Regarding vertical and parallel port extensions, for traditional vertical piers, a waterfront

platform can be added at the pier's end to create a transitional space between land and water. At the same time, water features or cascading waterfalls can be incorporated into the pier' s steps to enhance the space' s appeal and interactive experience; For single-direction parallel piers, the area of the waterfront platform at the pier' s end can be expanded. Combined with tiered planters, this creates a natural, three-dimensional green landscape that softens hard boundaries while enriching visual depth.

Regarding the design of stepped river embankments, for embankments of a certain width, the elevation of the pedestrian walkway can be lowered to create sunken promenades and small rest areas. By utilizing the natural elevation differences to delineate distinct functional zones, interactive waterfront spaces can be arranged along parallel steps, allowing pedestrians to gradually approach the water' s surface as they descend. This effectively bridges both the psychological and physical distance between people and the water, creating a richly layered waterfront experience.

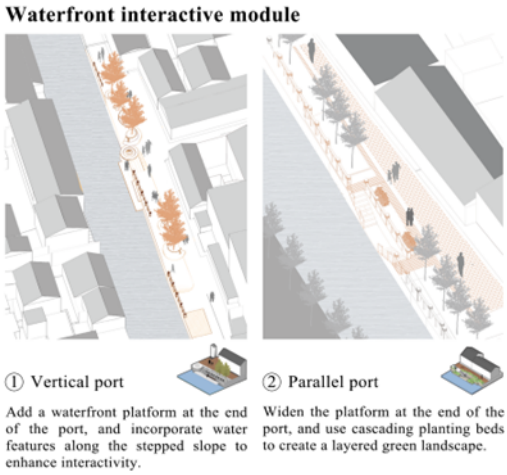

Figure 5: Standardized Micro-Update Design Modules for Node Spaces (Waterfront Interactive Module).

5.2 Spatial Integration of Waterfront Landscape Module and Coordination of Sightline

Waterfront landscape modules not only serve as spaces for viewing and relaxation, but also facilitate the integrated management of both waterborne and land-based transportation, thereby enabling the efficient, mixed-use development of spatial resources.

To address this situation, the strategy proposes remodeling the vertical elevation by introducing sunken pedestrian paths, effectively separating them from non-motorized vehicle lanes on a vertical plane. By applying soft paving with distinct colors and materials, and leveraging the elevation difference to naturally form resting spaces, this approach effectively shortens both the physical and psychological distance between human activities and the water.

In terms of interface treatment, emphasis is placed on opening up visual corridors and establishing cross-water connections. The strategy advocates opening up the enclosed waterfront embankment, incorporating landscaping and resting seats to foster a continuous and open waterfront atmosphere. Where water conditions permit, a gallery bridge can be erected to connect the landscape corridors on both banks. This creates an excellent scenic water-walking experience and introduces new resting nodes for the slow-traffic system, thereby transforming the waterfront from a single-function transit route into a composite public space that integrates recreation, sightseeing, and

lingering.

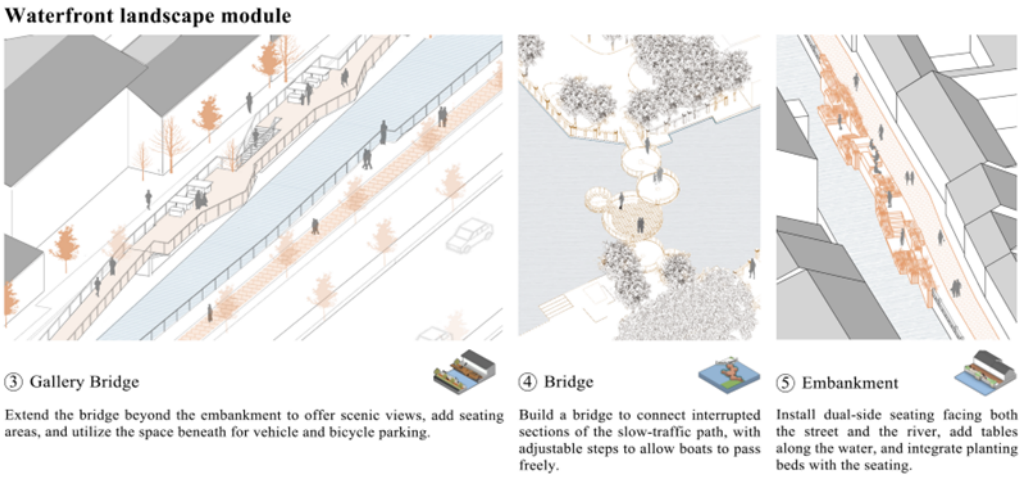

Figure 6: Standardized Micro-Update Design Modules for Node Spaces (Waterfront Landscape Module).

5.3 The Awakening of Negative Space in the Acupuncture-Style Resting Module

Land resources within the ancient water town are extremely scarce, making it difficult to secure large-scale public spaces. To address this, the strategy incorporates the "urban acupuncture theory." Unlike traditional large-scale renovations, this approach emphasizes respect for the existing urban fabric and the preservation of historical and cultural integrity. Building on this foundation, it is essential to identify and utilize underutilized "scrap" spaces within the ancient town as "acupoints" for the insertion of acupuncture-style resting modules. By employing minimal intervention through small-scale interventions, the aim is to revitalize the area, thereby achieving maximum spatial benefits at minimal cost [4].

These resting modules, based on point activation and localized renovation, primarily consist of two types: pocket parks and alleyway rest spaces. Regarding the opening up and extension of street corners, the strategy proposes breaking down walls in traditional, enclosed alleyway corners to transform these closed, uninviting spaces into open pocket parks. This approach not only effectively expands pedestrians' field of vision and enhances safety but also transforms previously underutilized corner spaces into community hubs serving local residents by adding activity areas and seating. Ultimately, the revitalization of these "acupoints" drives the renewal and sustainable development of the entire neighborhood.

In utilizing the "gray spaces" created by building recesses, the interior of streets and alleys should make full use of the staggered spaces around buildings and the recesses themselves. By partially adjusting and setting back the existing community perimeter walls, the width of the street-side walkways can be expanded to create buffer zones where people can linger; Building on this foundation, recreational and activity spaces should be established to transform what were once passive and cramped gray spaces into active, comfortable public nodes. Through targeted interventions, the vitality of micro-spaces along the streets and alleys can be revitalized, enabling limited spatial resources to achieve maximum efficiency along the pedestrian network.

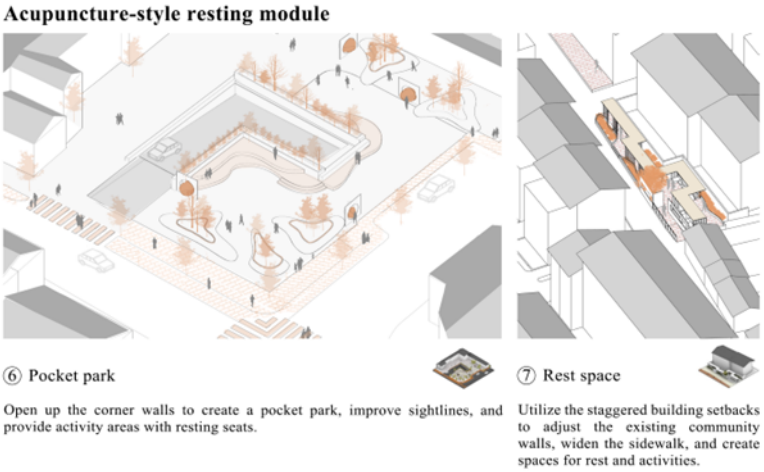

Figure 7: Standardized Micro-Update Design Modules for Node Spaces (Acupuncture-Style Resting Module).

6. Conclusion

Building on the unique dual-grid spatial framework of the ancient water town, this paper systematically establishes a universal paradigm for a "blue-green network" pedestrian system. This study overcomes the limitations of traditional planning dominated by subjective experience by developing a quantitative evaluation model that integrates multi-source data, including spatial syntax and POI core density analysis. Through an objective overlay analysis of the physical spatial framework and the functional needs of the population, this model provides a scientific, objective, and replicable path-generation paradigm for the "blue-green network" pedestrian system.

In terms of spatial implementation, this paradigm systematically addresses the high complexity and historical stratification of the water town's road network. At the linear framework level, it proposes differentiated optimization strategies—including spatial separation, three-dimensional interaction, visual character control, and waterfront revitalization—for four typical street prototypes: modern mixed-use, modern water-land dual-use, traditional pedestrian alleys, and traditional land-water hybrid roads. These strategies ensure the continuity and experiential quality of the pedestrian and cycling routes. At the node development level, this paradigm rejects the traditional large-scale plaza construction model. Adhering to the principle of "transforming the large into the small," it innovatively distills "plug-in" design modules for micro-spaces, including waterfront interaction, waterfront landscapes, and acupuncture-style resting areas.

This micro-renewal approach—centered on permeable flexible boundaries, multi-level integrated use, and the revitalization of negative space—not only reduces implementation complexity but also enables the standardized promotion and adaptive application of design strategies. Overall, the "Blue-Green Network" Pedestrian system construction paradigm uses key nodes to drive broader areas and links scattered attractions, historical sites, and residential zones into a cohesive whole. This not only establishes a refined model for public space renovation but also serves as a systematic project that comprehensively enhances the quality of public life and stimulates the long-term vitality of the ancient water town, all while respecting and promoting its traditional layout of "water and land running parallel, rivers and streets adjacent."

Acknowledgments

The field research and the compilation of typological strategies for this study were jointly conducted by team members Shuofeng Wang, Yule Fu, Ran Tian, and Yuhan Tang.

References

[1] Xinyi Yuan. A Study on the Evaluation of the Potential for the Renewal of Public Spaces in Suzhou's Historic City Center. Southeast University, 2022. DOI:10.27014/d.cnki.gdnau.2022.004886.

[2] Lingling Zhang, Jiali Wang, Zihao Wu, et al. A Study on the Relationship Between Typical Chinese Community Road Networks and Leisure Behavior Based on Spatial Syntax. New Architecture, 2021, (05): 148–153.

[3] Ying Long, Yin Zhou. Quantitative Evaluation of Street Vitality and Analysis of Influencing Factors: A Case Study of Chengdu. New Architecture, 2016, (01): 52–57.

[4] Yuxuan Xiong, Sheng Liu, Congxiang Tian, et al. A Study on Strategies for Revitalizing Historic Districts in Ancient Cities Based on Urban Acupuncture Theory: A Case Study of South Gate Street in Jingzhou Ancient City. Sichuan Building Materials, 2026, 52(02): 90–92.

[5] Xiang Wu. A Study on Pedestrian and Bicycle Traffic Design in Historic Districts Under the Concept of the Complete Street: A Case Study of Suzhou's Old City. Architecture and Culture, 2021, (06): 129–130. DOI: 10.19875/j.cnki.jzywh.2021.06.046.