

Research on Landscape Design of Urban Public Spaces from a Regional Perspective

Zixian Wang^{1*}

¹ Ballistic Architecture Machine, Beijing, China

Email Address

wangzx@bam.earth (Zixian Wang)

*Correspondence: wangzx@bam.earth

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Abstract:

This study will identify design directions for urban public space landscape, using the regional perspective. The regional perspective is a primary way of supporting action to address landscape homogenization, ecological disconnectedness and cultural fragmentation. This study showed the rich interactive relationship between understanding what is regional natural features, spatializing historical context and developing place spirit. It also identified several critical aspects of the current design including confusing meanings of regional characteristics, weak ability to understand ecological adaptability, limited public co-designing capabilities to reflect design thinking and problematic friction between technology and culture. The study suggested core strategies; firstly a systematic innovation and transformation process of regional cultural elements, secondly an active and collaborative approach to construct a landscape technology framework in context to the regional ecological backdrop, with emphasis on the public can help fit the missing piece as a whole-process co-design mechanism, also one of coordination between technology and traditional cultural protection. Regional design aims to use place identity to create urban public spaces which have ecological expression, cultural depth in place development, which solve community context, to materially define urban place interactions and unique humanistic identity.

Keywords:

Regional Perspective, Public Space, Landscape Design

1. Introduction

Urban public spaces serve as platforms for citizens' daily activities and social interactions, and their landscapes profoundly influence the quality and sense of spiritual belonging of a city. Amidst the tide of globalization, designs lacking regional roots have led to a homogenization of urban landscapes, the erasure of public space characteristics, and weakened emotional connections to places. Landscape transcends mere aesthetics and functionality, and its essence is a spatial reflection of the natural history and socio-cultural context of a specific region. Examining landscape design from a regional perspective means deeply understanding the natural codes of the land, interpreting the spatial texture accumulated over history, and listening to the public's collective memories and shared expectations for the place. This is not only an

inevitable requirement for returning to the essence of the place, but also an intrinsic drive for enhancing the city's soft power and residents' happiness.

2. The Interactive Relationship Between Regional Perspective and Landscape Design

2.1. Landscape identification of regional natural characteristics

In the design of urban public space landscapes, designers conduct in-depth investigations into the natural characteristics of the region, encompassing topographical variations, climatic patterns, and the distribution of native vegetation. They meticulously observe soil texture, water flow direction, and seasonal change patterns. These regional natural characteristics provide a crucial basis for landscape design. After identifying these elements, designers plan the spatial structure, such as adjusting the path direction based on slope or matching vegetation planting areas. The landscape design process integrates these identification results. Designers prioritize the continuity of the natural environment, avoiding artificial interference with ecological balance. The layout of public spaces reflects local characteristics, and designers ensure that element selection respects the original style, forming a harmonious overall image [1].

2.2. Translation of historical context into spatial genes

In the process of transforming historical background into spatial genes, historical researchers sort out the local cultural context, identify traditional architectural forms and activity trajectories, and design teams extract core spatial features from historical relics. These features include courtyard combinations, axis sequence relationships, and traditional material craftsmanship. The design team transforms abstract cultural elements into actionable landscape language. The spatial layout inherits the original settlement texture, and the design team adjusts the matching degree between modern functional requirements and traditional spatial patterns, reproducing the spirit of historical places in public spaces. The material selection continues the wisdom of regional construction, and the design team uses local techniques to update the details of landscape structures. The spatial genes are transmitted through paving patterns and boundary treatment to convey collective memory. The landscape structure maintains a sense of historical spatial scale, and the design team controls the spatial dialogue between the newly built volume and the original environment, forming a continuous cultural expression of the site features. Regional history is materialized through spatial genes, and the design team ensures the regeneration of traditional wisdom in modern settings.

2.3. Construction of social recognition of place spirit

Designers deeply understand residents' daily behavior patterns and social habits, capturing the spontaneous activity trajectories and staying preferences formed in the streets and alleys. The long-standing gathering patterns of community members influence the spatial layout and form. Designers configure differentiated leisure facilities based on the characteristics of intergenerational interaction. The demand for local festivals and ceremonies shapes the functional composition of the place. Designers transform folk activity spaces into flexible venue modules. Cultural memory is attached to specific material carriers, and designers use local narrative techniques to organize the sequence of landscape installations. Residents' collective

identification with spatial symbols stimulates their awareness of participation and maintenance, and design strategies retain the possibility of community self-transformation. The spirit of place gradually becomes clearer through continuous use, and the quality of space reflects the true state of social relations. Daily interaction behaviors consolidate a sense of belonging to the space, and the physical environment supports the continuation of the tradition of neighborhood mutual assistance. Design intervention balances public norms and spontaneous use needs, and spatial details accommodate individual emotional expression. Regional social characteristics ultimately manifest as a perceptible spatial atmosphere, and landscape elements carry group identity.

3. Key Issues Faced in Urban Public Space Landscape Design from a Regional Perspective

3.1. Insufficient Exploration of Regional Characteristics and Severe Landscape Homogenization

In the practice of urban public space landscape design, city managers often suffer from a one-sided identification of regional characteristics due to insufficient preliminary research. The design team's grasp of the local natural texture and cultural context remains at a superficial level. Standardized design processes squeeze the space for expressing local characteristics, and the design team applies generic templates to weaken the uniqueness of the site, resulting in open spaces in different cities gradually taking on a similar appearance. Landscape plans neglect microclimate adaptability adjustments, vegetation configuration and material selection are divorced from the regional environmental foundation, and public spaces lose their organic connection with the surrounding environment. Design decisions overly rely on visual form uniformity, and the place characteristics formed by historical memory accumulation are covered by standardized elements, leading to a monotonous and repetitive spatial experience. The rapid construction cycle hinders the in-depth exploration of local resources, making it difficult for the design team to transform regional culture into innovative landscape language. Citizens' sense of belonging to the place is weakened due to the lack of identifiable features, and public spaces fail to carry the due regional identity [2].

3.2. Inadequate Compatibility Between Design and Regional Ecological Environment

In landscape design practice, design strategies often overlook the inherent laws of local soil and water conservation. The implementation of projects alters the original topographical and hydrological characteristics, and the expansion of hard paving areas narrows natural rainwater infiltration channels. Vegetation configuration focuses on immediate visual effects, while the implementation of projects ignores the ecological niche requirements of plant communities, allowing invasive species to occupy the living space of native plants. Resource consumption patterns violate the characteristics of regional energy cycles, with material transportation increasing hidden carbon emissions and landscape maintenance continuously consuming non-local water resources. Stormwater management measures fragment natural water catchment systems, and the implementation of projects fills natural depressions, leading to the transfer of waterlogging risks. Biological migration corridors are cut off by recreational facilities. Ecological experts point out that existing irrigation methods

disturb groundwater balance, and the design team fails to incorporate microclimate regulation into plant selection criteria. The imbalance in the ratio of deciduous trees to evergreen shrubs weakens the cooling effect. Habitat fragmentation hinders species gene exchange, with monoculture lawns replacing complex vegetation structures and pollinators losing food sources. The continuity of ecological processes is subject to human intervention, leading to a fundamental conflict between the landscape renewal cycle and the rhythm of natural succession, ultimately forming a fragile system with high maintenance costs.

3.3. Public Absence in Regional Perception and Expression of Needs

In the process of public space design, the design team's dominant role in shaping the plan compresses the depth of public participation, making it difficult for residents' collective memories and daily needs of the place to be integrated into the design framework. The decision-making mechanism lacks a platform for multi-stakeholder consultation, and the local knowledge accumulated by community elders is filtered by modern design standards. The demands for ceremonial spaces proposed by cultural inheritors encounter implementation difficulties. Information transmission relies on one-way publicity, and the professional terminology used by the design team forms a cognitive barrier, preventing migrant groups and people with disabilities from expressing their special usage needs. When the plan enters the implementation stage, construction companies mechanically follow the details of the drawings, and the indigenous people's spontaneous wisdom in adjusting space usage is restricted by technical specifications. The differentiated activity needs of different age groups are difficult to coordinate, children's natural exploration areas are often compressed by safety regulations, and teenagers' social spaces are squeezed by commercial facilities. Cultural practitioners find that there is a functional conflict between traditional festival venues and modern landscapes, with the necessary flexible spaces for folk activities being occupied by fixed facilities. The cognitive gap in regional characteristics leads to weakened spatial identity, and newcomers cannot understand the cultural codes hidden in the place, resulting in a sense of alienation between design outcomes and real life.

3.4. Conflict Between Modern Technology Application and Traditional Culture Preservation

In the field of landscape design, the process of generating schemes dominated by technological systems has changed traditional design logic. Digital modeling has surpassed manual surveying and mapping in accuracy, yet simplified the complex connotations of regional cultural symbols. Design teams rely on parametric tools to generate spatial forms, the organic growth texture of historic districts is deconstructed by geometric algorithms, and the tactile sensation of traditional materials is transformed into standardized data parameters. Intelligent irrigation systems cover traditional rainwater collection depressions, and sensor networks replace plant maintenance rhythms based on phenological experience, leaving local craftsmen facing a skills inheritance gap. Cultural protectors have found that virtual display technology weakens the ritualistic sense of physical space, holographic projections interpret folk activities, impacting real cultural practices, and sound and light installations mask the primitive rhythm of natural day and night cycles. The update cycle of smart facilities driven by technology suppliers continuously covers familiar

spatial usage patterns for residents, and interactive interfaces fragment direct human communication [3].

4. Core Strategies for Landscape Design in Urban Public Spaces from a Regional Perspective

4.1. Systematically excavating and innovatively transforming regional cultural elements

To systematically explore regional cultural elements, the design team must deeply analyze the interaction between local production activities and nature. Professionals carry out operational steps: the archives team consults local water conservancy records to extract canal management technical drawings, while the field team visits farmers to collect information on the use of traditional irrigation tools; designers select key symbols for translation, such as transforming the principle of sluice lever into the valve structure of an interactive device, while craftsmen abstract the cross-sectional shape of irrigation canals into pavement texture lines, and the construction team uses recycled canal stones to build the base of a hydrological model. As shown in Figure 1, the “Water Play Hill” installation at Tianjin 4A Sports Park embodies this strategy. Focusing on the essence of water conservancy heritage in the Yangtze River Delta, the design team abandoned the reproduction of the giant scale of the Three Gorges Dam and refined the core mechanism of the Dujiangyan diversion principle. Children's act of rotating the yellow valve to regulate the flow path reappears the essence of ancient water management actions. The process of miniature water flowing through cascade terrain and converging into the terminal water area interprets the eternal proposition of human transformation of nature.

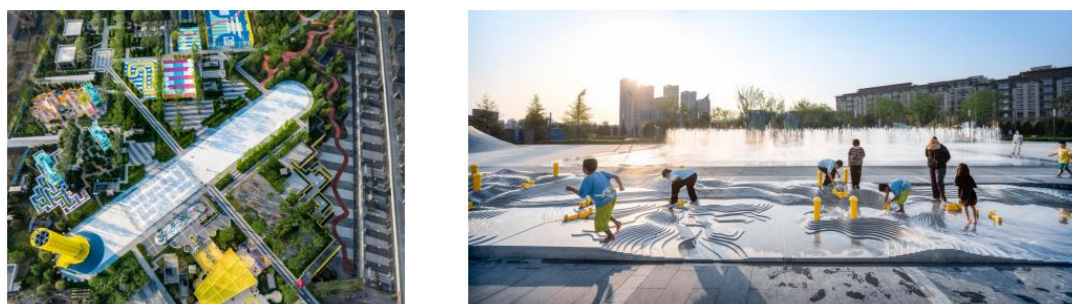


Figure 1. Tianjin 4A Sports Park.

4.2. Establishing a landscape design and technical system based on regional ecological foundations

The landscape design system must be rooted in the ecological foundation of a specific region. The design team should deeply analyze the existing ecological conditions of the site, systematically organize the naturally formed water circulation pathways and biological migration corridor spatial patterns, and transform the inherent laws of natural processes understood into the core basis supporting design decisions. As shown in Figure 2, the rendering of the overall green network and water system aerial view of Beijing Daxing Park demonstrates the design results that organize the rainwater management and biological habitat network with the original gullies and seasonal wetlands as the framework. Ecological experts need to guide the establishment of dynamic environmental simulation models to scientifically predict the potential microclimate change trends that may be triggered by different landscape

intervention measures and their potential impact on the local species distribution pattern, so as to enable the formulation of design strategies to accurately match the natural succession stage of local vegetation communities. To construct a technical system that adapts to regional characteristics, it is necessary to respect and utilize the inherent properties of local materials. Relevant research and development efforts should focus on developing structural connection nodes that are suitable for the physical properties of local stone materials and regional aesthetic characteristics. At the same time, effective paths should be explored for using parametric design tools to optimize traditional weaving craft forms to meet modern ecological performance requirements. The design of rainwater management systems needs to actively imitate and integrate into the original natural water catchment pattern of the site. Specific measures should consider designing facilities such as sunken green spaces to effectively connect and supplement the existing natural groundwater recharge channels [4].



Figure 2. Beijing Daxing Park.

4.3. Strengthening mechanisms for public participation in regional landscape co-creation throughout the entire process

The shaping of regional landscapes cannot be separated from the wisdom of the people living within them. The design team should begin constructing an inclusive public participation framework at the project initiation stage. Community organizers need to assist in convening a multi-party dialogue platform that includes representatives of indigenous people, new citizens, and special needs groups. The design team should use visual tools to transform professional drawings into easily understandable community maps. Local knowledge holders need to be given ample space to express themselves, and the design team should systematically record residents' collective memories and daily behavioral preferences towards historical spatial nodes, integrating these vivid imprints of life into the conceptualization of the scheme. Public representatives should participate in the interactive sessions of design workshops, and the design team needs to provide material samples and spatial models for residents to experience on-site and provide feedback. Construction drawings must be publicized and reasonable adjustment suggestions must be incorporated before finalization. During the landscape maintenance phase, a mechanism for residents to jointly build and manage should be established. Community organizers can guide volunteers to participate in the maintenance records of native plants, and the design team needs to reserve flexible interfaces for residents' spontaneous spatial improvements.

4.4. Promoting technology-enabled protection of regional characteristics and sustainable management

The appropriate application of modern technology can provide strong support for the protection of regional characteristics and sustainable landscape development. The technology research and development team should establish a comprehensive database covering the performance of regional materials and technological characteristics, providing a precise local knowledge base for design decisions. Digital modeling technology needs to be used to accurately record and analyze the spatial gene sequence of historical districts, and parametric design tools should assist in optimizing traditional construction forms to meet modern performance standards. Intelligent monitoring systems must be deployed at key ecological nodes, and the technology research and development team needs to develop automatic irrigation programs based on phenological patterns and soil moisture conditions. Material scientists can collaborate with artisans to enhance the durability of traditional building materials. The technology research and development team needs to explore the use of local renewable resources to develop ecological composite materials. CNC machining technology should serve the high-precision reproduction of traditional decorative patterns. The intelligent management platform must integrate spatial usage dynamics and environmental monitoring information. The technology research and development team should build a facility maintenance warning model based on data analysis. Remote diagnostic tools need to assist local teams in the preventive protection of cultural heritage components [5].

5. Conclusions

The regional focus injects the design of the urban public space landscape with spirit and direction. The regional perspective encourages designers to go beyond formal mimicry, seek deep regional essence, and listen to the stories of people and land. By creatively designing a landscape that embodies unique landforms and vegetation, archetypal historical palimpsests, and communal ways of being, unique and livable spatial experiences emerge as a landscape that serves as an ecological gallery bequeathed by nature, a time capsule of historical narratives, and a shared living room of collective emotional belonging. As we grapple with ecological limits and cultural discomforts, finding the equilibrium between dispositional modernity and assimilated tradition will enable public buy-in to regional landscapes as co-writers. Only then can cities have lasting and affective poetic habitats. It is the ongoing story of allowing plants and trees to tell the story of the land.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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