

Urban Landscape Design Strategies Based on Cultural Heritage Protection

-- Taking the Urban Renewal Landscape of Wuhu Ancient City in Wuhu City, Anhui Province as an Example

Yujie Wang

The Academy of Architecture and Arts of the Southern Federal University, Rostov-on-Don, Russian

Abstract: The article's focus is on the urban landscape design strategy based on cultural heritage protection. It introduces the importance of cultural heritage protection and discusses its significance and the relationship between urban landscape design. It also examines relevant cases of urban landscape design based on cultural heritage protection in China and abroad. Finally, it puts forward a strategy for strengthening historical protection. The article also promotes social participation and highlights the innovation of the three urban landscape design strategies. It combines this with the application of the Wuhu ancient city urban landscape example in the hope that it will provide a reference and reference for the cultural heritage protection of the city landscape.

Keywords: Cultural Heritage Preservation; Urban Landscape Design; Historic Preservation; Wuhu Ancient City.

1. Introduction

Cultural heritage represents a valuable asset for any country or nation, serving as a tangible manifestation of the continuity of history, culture, and society. Nevertheless, the accelerated urbanization and modernization processes are placing significant pressure on the ability of cities to protect their cultural heritage. In the context of cultural heritage protection, urban landscape design plays a pivotal role. In addition to aesthetic considerations and functional requirements, urban landscape design must also respect and protect the distinctive value of cultural heritage. Consequently, the objective of this paper is to examine urban landscape design strategies that are based on cultural heritage protection. The intention is to provide urban landscape design solutions that advocate sustainable development.

2. Urban Landscape Design and Cultural Heritage Preservation

2.1. Significance of Cultural Heritage Protection

The preservation of cultural heritage is of significant consequence for a country, a nation, or a region. Cultural heritage encompasses a rich repository of human history and culture, serving as a priceless witness to cultural traditions, values, and skills. It is of paramount importance for the in-depth understanding and study of the history of human society. Furthermore, cultural heritage serves as the foundation of social identity and value recognition, fostering the strengthening of people's self-esteem and sense of belonging.

The preservation of cultural heritage also contributes to the promotion of intercultural exchanges and understanding, as well as the deepening of ties and interactions between different cultures. Through the protection and transmission of cultural heritage, people can better understand and respect the uniqueness of other cultures, thus building a more tolerant and harmonious social environment. Furthermore, cultural

heritage is an important resource for tourism development. The protection of cultural heritage not only attracts domestic and foreign tourists and contributes to the prosperity of the tourism industry, but also provides important support for economic growth and promotes the overall progress and development of society.

2.2. Interaction between Urban Landscape Design and Cultural Heritage Protection

The fields of urban landscape design and cultural heritage protection are inextricably linked, with each influencing the other and complementing one another. Urban landscape design provides residents with aesthetic enjoyment and a comfortable experience by creating the form and function of the urban environment. Integrating the concepts and principles of cultural heritage protection into urban landscape design can help protect and inherit historical sites and traditional culture. Reasonable integration of cultural heritage protection in urban landscape design can enhance its value and sustainability. Through scientific planning, appropriate transformation, inheritance, and reuse, historical sites and traditional culture are integrated into the urban landscape to revitalize them and integrate them with modern urban functions. This not only demonstrates the distinctive appeal of cultural heritage but also addresses the development needs of contemporary society.

The design of urban landscapes can convey the connotations of cultural heritage through the creative layout of landscape elements and art installations, as well as the incorporation of relevant historical stories and traditional cultural characteristics. This approach not only enhances the urban landscape but also facilitates a deeper comprehension of cultural heritage. Furthermore, urban landscape design can also encourage public participation, increase people's attention to cultural heritage, and enhance their awareness of cultural heritage protection. Through landscape design and cultural activities, the public can be encouraged to actively participate in cultural heritage protection actions, thereby

collectively shaping and sharing cultural landscapes and cultural memories.

3. Domestic and International Practices in Urban Landscape Design based on Cultural Heritage Preservation

3.1. Hortos de Baix, Rehabilitation of Irrigation Areas in Old Spanish Cities, Spain

The project, designated as Hortos de Baix, was completed by the design firm CAVAACíclica in 2015. The 3.7-hectare site is situated in Spain, in close proximity to a historic agricultural farming area in the vicinity of Caldes de Montbui, Barcelona's former spa town. However, with the expansion of the city in the 20th century, this esteemed and idyllic landscape was subjected to both environmental and social restructuring. The decline of the Hort de Baix was a consequence of urbanization, which led to the contamination of the water sources of the irrigation system, the absence of excursion routes, and the disintegration and disappearance of the agricultural population. The central element of the project is a 3-meter-high irrigation canal that connects the city to the farmland. However, as the city grows, this important irrigation canal is gradually buried and reduced to a sewage ditch. Nevertheless, the public's attention has prompted a renewed focus on clean water as a shared resource for the residents, with the potential to reintegrate into the lives of the town's inhabitants.

3.2. APSE Plaza, Spain

The APSE Plaza, situated in Spain, was designed by the architectural firm Arquitectura. The project's intervention consisted of the restoration of the public space surrounding the nave of the Cathedral of Tortosa, with the objective of preserving and rebuilding its new environment. The piazza is no longer used for vehicular parking, but rather is open for public use. The sidewalks were lowered to the level of the Cathedral's original foundation height, symbolizing the significant collective historical and cultural heritage of Tortosa. The stepped walkways of the square permit pedestrians to pause, repose, and reflect in the vicinity of the monument. They also serve as a venue for popular events such as parades, concerts, and art exhibitions. This intervention is socially significant and of urban value, reflecting a concern for historical heritage and its role in the city.

3.3. Landscape Design for Lorsch Abbey, World Heritage Site, Germany

The project was completed by the design firm TOPOTEK 1 and was constructed in 2014. It is located in Germany. The history of the abbey dates back to 767 A.D., when the monks established a monastery nearby, which was later relocated and finally settled on this site. The Torhalle gate and the church, built in the 9th century, are the only remaining structures of the entire abbey and one of the best preserved buildings of the Carolingian era on the east bank of the Rhine. The landscape design is based on these two structures. Firstly, the designer relocated the former parking lot in the vicinity of the former entrance to the abbey, with the intention of enabling visitors to experience the cultural heritage in a chronological order. This has been found to significantly enhance the visitor

experience. The winding roads that traverse the site are integrated into the open landscape environment, affording visitors a clear understanding of the entire site and insight into the structure of the former monastery.

3.4. Zollverein Park, Germany

The project, designed by Planergruppe GmbH Oberhausen and completed in 2020, is situated in Germany. The site, which was previously the Zollverein coal mine, is situated in a remote location and is surrounded by walls and fences, which have contributed to its low level of visitor numbers. However, the abandoned industrial park has become a habitat for a multitude of plants and animals. In a relatively short period of time, the area between the coal plant and the coking plant was transformed into a park. Despite the architectural changes, landscape architects and horticulturalists were not involved in the project, resulting in a distinctive style that was spontaneously formed by nature. The site, which was previously an industrial area, has been transformed into a diverse array of open spaces, including groves, dark shrubs, lakes, and open vistas. Those who visit the area are able to stroll along the tree-lined paths and experience the natural beauty of the area.

3.5. Niushoushan Cultural Tourism Zone, Nanjing, China

In 2015, the HASSELL Design Unit developed a concept for the Nanjing Niushoushan Cultural Tourism Zone with the objective of showcasing and preserving the area's precious cultural heritage. This thousand-year-old Buddhist sanctuary features Ming Dynasty temples, ancient tombs, palaces, a distinctive village, and a reservoir. Upon entering Tranquility Square, situated at the heart of the park, visitors will traverse a series of Zen gardens, which feature steel elements designed to respond to the changing topography of the site. These gardens are comprised of scrolls of weathering steel, symbolizing Buddhist scriptures, which run through the landscape. The weathering steel scrolls form the water structure of the plaza's "Mirror Terrace Walkway," reflecting the ever-changing landscape of Niushou Mountain and attracting the visitor's attention. The scrolls then unfold to form a high wall, providing a moment for meditation on the Dharma's face. Finally, the scroll ascends along the water stream to the Yinyong Lake Plaza, concluding the garden journey. At the highest point of the landscape, visitors can enjoy a serene setting overlooking the landscape of Hidden Dragon Lake.

3.6. Ancient Great Wall Cultural Heritage Corridor, Shanxi, China

The Great Wall of China, one of the world's most significant cultural heritages, is currently facing a multitude of challenges, including the deterioration of the local environment, the reduction of tourism opportunities, and the impoverishment of neighboring communities. In response to this issue, the design team proposed a master plan for the 258-kilometer-long corridor of ancient Great Wall sites in Datong, Shanxi. This plan was developed based on in-depth historical and cultural analyses, extensive public engagement, and up-to-date field surveys. The project encompasses a number of Great Wall sites in Datong, including relics and structures from various historical periods, such as the Great Wall of the Han Dynasty and the Great Wall of the Tang Dynasty. The design aspires to unite these disparate Great Wall sites

through landscape planning and cultural protection, thereby establishing a comprehensive cultural corridor. This will serve as a venue for tourists to gain insight into the history of the Great Wall of China and experience the traditional Chinese culture. The plan integrates the local natural landscape and rich cultural heritage in a manner that is both environmentally sustainable and culturally sensitive. It focuses on large-scale ecological restoration and the construction of scenic spots, while promoting the development of tourism and realizing the community revitalization of the entire ancient Great Wall area.

4. Urban Landscape Design Strategies Based on Cultural Heritage Protection

4.1. Enhancing Historic Preservation

The protection and restoration of historical buildings and cultural landscapes are crucial elements in urban landscape design. In the case of historical buildings, a comprehensive investigation and assessment should be conducted to gain a comprehensive understanding of their historical value, structural condition, and restoration needs. Based on the findings of the investigation and assessment, appropriate measures such as restoration, reconstruction, or reinforcement should be implemented to maintain the original appearance and characteristics of the buildings. In the case of cultural landscapes, the protective design concepts and layouts of urban parks, gardens, and streets should be followed, and the necessary restoration and maintenance work should be carried out in order to reinstate the historical and cultural elegance. In the process of preserving and restoring historical buildings and cultural landscapes, it is essential to employ professional landscape design methods, including the use of materials and techniques that align with specific historical periods and architectural styles. This approach ensures the maintenance of historical buildings and cultural landscapes' coincidence, authenticity, and credibility. Additionally, it is crucial to prioritize harmonization with the contemporary functions of the city, enabling historical buildings and cultural landscapes to adapt to the evolving needs of people and environmental development.

In urban landscape design, it is also of the utmost importance to respect the protection of historical and cultural identity. This entails the prioritization of the integration of historical and cultural elements into buildings, landscapes, and public spaces, thereby demonstrating the distinctive cultural values associated with these elements. In the protection of historical buildings, the characteristics and architectural styles of their times can be continued by preserving the forms and details of the buildings. In the design of public spaces, reference can be made to the historical layout and scale of the community, maintaining the continuity and harmony between streets, squares, and buildings, and fully respecting the imprints of their times and the environmental atmosphere.

4.2. Promoting Social Participation

In urban landscape design, it is essential to engage community residents in an active manner. This can be achieved through various forms of participation, including research meetings, hearings, symposiums, and other avenues. Additionally, it is crucial to maintain close contact with community residents to ensure their continued involvement

and understanding of the urban landscape design plan. The program's implementation process entails the realization of the effect of relevant information, as well as the solicitation of opinions and suggestions from community residents, the collection of feedback information, and the establishment of good cooperation and communication.

The process of inviting the community to participate in the design process is thus initiated. In this process, it is imperative that community residents be invited to actively participate in the urban landscape design program solicitation and design decision-making process. This participation should extend to participation in planning meetings, design discussions, and other links to ensure transparency and feasibility of the information. This transparency and feasibility will ensure that community residents can fully understand and participate in the process. Through the process of co-creation, community residents are able to directly participate in the design scheme and share their ideas and needs. This enables the optimization of the urban landscape design scheme, while ensuring that the design scheme can fully meet the expectations of the community.

In the context of urban landscape design, it is also essential to respect and protect the unique cultural heritage and historical remains of the community. This ensures that the design program can be compatible with the identity of the residents and the spirit of the community, in line with the needs of urban landscape design and environmental characteristics. Involving community residents in the design decision-making process will enable them to gain a deeper understanding of the principles and objectives of urban landscape design, to become more aware of the importance of cultural heritage protection, and to enhance the cultural value of urban landscape design.

4.3. Highlighting Innovation

The incorporation of innovative design concepts and techniques is of paramount importance in the field of urban landscape design. The exploration of novel design concepts and techniques serves to enhance the distinctive and innovative character of urban landscape design. The integration of ecological design principles and the incorporation of natural elements into urban landscape spaces can enhance the sustainability and ecosystem service functions of urban landscape design. The promotion of human-centric design principles, the consideration of user needs, and the creation of comfortable, convenient, and aesthetically pleasing urban landscape spaces can improve the adaptability and functionality of urban landscape design. The implementation of environmentally conscious design techniques, the incorporation of renewable materials, and the introduction of self-cleaning material processes into landscape design can further enhance the environmental friendliness of urban landscape design. The durability and environmental friendliness of urban landscape design can be enhanced by incorporating environmentally friendly design technologies and renewable materials and self-cleaning material processes into landscape design and construction. The integration of digital design technology, artificial intelligence, the Internet of Things, and other technologies into the urban landscape can enhance the performance and sustainability of urban landscape design. The implementation of intelligent management technology, intelligent transportation systems, intelligent lighting systems, and intelligent public facilities, among other intelligent

interventions in the management of the urban landscape, can elevate the management level and landscape quality of urban landscape design.

In urban landscape design, the skilful combination of traditional and modern elements is also an important avenue for landscape design innovation. Cultural heritage is replete with traditional elements, which represent the concentrated manifestation of history and culture. In contrast, urban landscapes exhibit unique modern elements, which are the imprint of the development of the times and science and technology. The judicious integration of traditional and modern elements enables the creation of a distinctive historical and cultural backdrop, complemented by a contemporary, dynamic ambience. By skillfully combining traditional and modern elements, it is possible to create a cityscape with a unique historical and cultural background and a high degree of modern vitality. The integration of traditional and modern elements in urban landscape design necessitates an in-depth examination of the historical and cultural nuances of the city, which must be harmoniously blended with the contemporary urban landscape requirements.

5. Wuhu Ancient City Urban Landscape Design and Transformation Practice

5.1. Background Overview

Wuhu Ancient City is situated in the center of Wuhu City,



Fig 1. Laifeng Gate, Wuhu Ancient City (Source: www.shuishi.com)

5.2. Renewal and Rehabilitation Strategy

5.2.1. The Spatial Organization of the Alleys

The ancient city is characterized by a multitude of streets and alleys of varying scales, which collectively maintain the overall pattern of the Ming and Qing dynasties. These alleys, which have retained their traditional commercial style, contribute to the city's distinctive urban fabric. It is evident that a hasty alteration of the scale and direction of the streets will undoubtedly have an impact on the overall layout of the ancient city. Consequently, the design team conducted an examination of the historical context, integrating it with an analysis of traffic patterns and the surrounding commercial activities. This approach ensured that each new design element was integrated into the narrative of the entire historical space and met the needs of different street spaces. By restoring the historical context and delineating the new

Anhui Province, China. It is located in the Huaihe River Basin, surrounded by flat topography and a mild and humid climate, which is a typical Jiangnan water town landscape. The ancient city contains historical buildings, streets, and cultural relics, and is one of the most important historical and cultural heritages of Wuhu City.

Nevertheless, with the acceleration of urban development and modernization, the landscape environment of Wuhu Ancient City is gradually facing challenges and changes. In the process of urban renewal, the collision between tradition and modernity, and the balance between the protection of cultural heritage and the needs of urban functions have become the focus of attention. SHUSHI, a professional landscape design company, was commissioned to design the landscape environment for the urban renewal of the ancient city of Wuhu. The design team draws inspiration from historical precedents, reimagines the street space, preserves the original trees, and explores the relationship between the cultural heritage of the site and the contemporary inhabitants. By blending the ancient and the modern, reconstructing, and regenerating, the team aims to create a new Wuhu Ancient City that is vibrant and dynamic.

activity space, visitors can appreciate the site and its cultural significance.

5.2.2. Protecting Old and Valuable Trees on the Site

The design team, in collaboration with the owner and the architectural firm, conducted a meticulous survey of each ancient tree, carefully documenting its exact location and taking protective measures. This was done to ensure the preservation of the historical heritage of the old city and the symbiotic relationship between the plants and the site. The objective of the design team was to ensure that these ancient trees would continue to serve as a testament to the evolution of the Old City long after the site was opened to the public.



Fig 2. Restored streets and scenes of life (Source: www.shuishi.com)



Fig 3. Preserved old trees on the original site (Source: www.shuishi.com)

5.2.3. Combining Old and New Materials

In the course of renovating the historic city center, all sectors of the community were engaged. The "Brick Picking" campaign by artist Ying Tianqi provided a significant source of inspiration for the construction of the Old City, where traditional and contemporary materials were combined and applied to the façades, landscape walls, paving, and furnishings. Local craftsmen were invited to re-lay the bricks using traditional methods, thereby revitalizing the buildings as they were being constructed.

5.2.4. Results of Project Implementation

The site's rich history and variety of activities offer the old city a multitude of possibilities for operation and vitality. The design team's restoration of the historical appearance through design and integration of the historical lineage and modern life in the venue has made the ancient city an important place for displaying the history and culture of Wuhu, a living cultural heritage, and has reinvigorated the ancient city of Wuhu after the vicissitudes of the century.

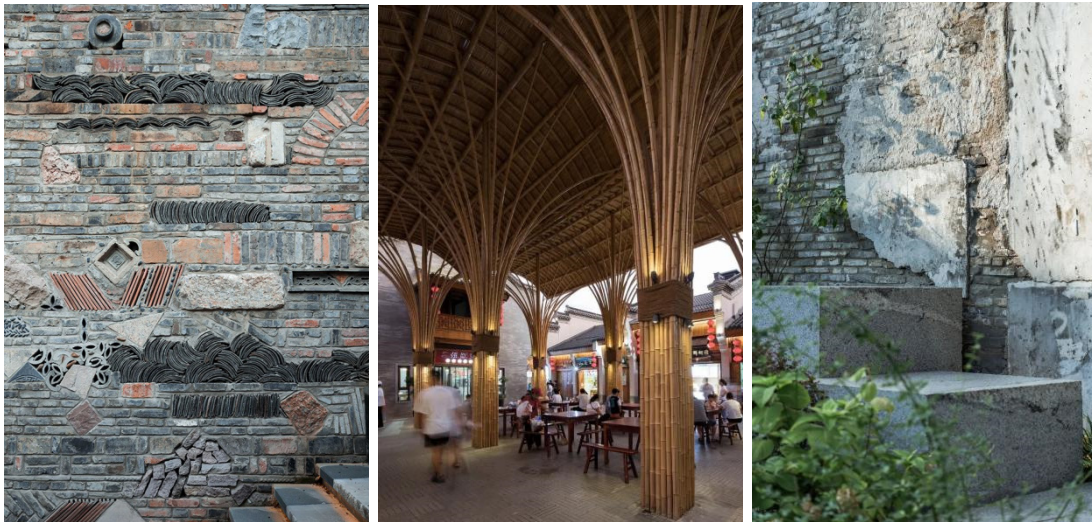


Fig 4. Combination of new and traditional materials (Source: www.shuishi.com)

6. Conclusion

Cultural heritage represents a valuable asset for historical development and a special resource for urban development. The urban landscape plays an important role in the protection of cultural heritage. This paper presents a strategy for strengthening historical protection, promoting social participation, and highlighting innovation in three major

urban landscape design strategies. It draws on research and analysis of urban landscapes based on cultural heritage protection at home and abroad. The strategy is exemplified by a case study of Wuhu Ancient City in Wuhu City, Anhui Province. The objective is to provide experience and reference for urban landscape design work.



Fig 5. Events held after the renovation, such as seminars, light festivals, national style bazaars, Mid-Autumn Gala, Lantern Festival, etc. (Source: Wuhu Ancient City Official)

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