

Research on the Protection and Transformation of Traditional Architecture

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Abstract: Traditional architecture, as a crucial component of human cultural heritage, conveys significant historical context and cultural significance while reflecting regional traits and national identity. Nevertheless, in the face of rapid modernization, traditional architecture is encountering challenges on an unprecedented scale. This study focuses on examining the strategies for preserving and transforming traditional architecture. By evaluating the importance, issues, and obstacles associated with safeguarding traditional architecture, this paper seeks to propose effective and rational conservation approaches and transformation techniques, ultimately aiming to ensure the sustainable development and cultural continuity of traditional architecture.

Keywords: Traditional architecture; Protection; Transformation; Cultural inheritance

Online publication: April 28, 2025

1. The importance and necessity of protecting and transforming traditional architecture

1.1. Historical and cultural inheritance

The architectural styles, decorative elements, and spatial arrangements of traditional structures serve as reflections of the social culture and aesthetic values from specific historical periods. These aspects contribute to the uniqueness and diversity of regional cultures. For instance, ancient Chinese architecture emphasizes the philosophical concept of harmony between humans and nature. Through skillful design layouts and intricate decorations, it conveys the ancients' respect for the natural world and their wisdom in achieving coexistence. In contrast, European structures such as medieval castles and churches, with their grand exteriors and exquisite interior embellishments, embody the religious beliefs, noble traditions, and artistic accomplishments of European societies since the Middle Ages. These buildings act not only as historical witnesses but also as cultural custodians and educators. They narrate the tales of the past in a silent yet powerful manner, sparking people's curiosity and contemplation regarding history and culture ^[1].

Moreover, safeguarding traditional structures plays a crucial role in sustaining cultural diversity and fostering

intercultural interactions. In an era of globalization, the movement toward cultural uniformity is growing more pronounced, placing numerous local traits and cultural customs at risk of being sidelined or even lost altogether. As emblematic representations of regional culture, preserving historic architecture signifies not only a commitment to local traditions but also an offering to global cultural richness. Consequently, it is essential to uphold and safeguard traditional buildings. Through their preservation, a dynamic space for interaction and dialogue can be created between diverse cultures, encouraging mutual appreciation and respect, while collaboratively establishing the cultural groundwork for a shared human destiny ^[2].

1.2. Urban landscape

Traditional buildings frequently exhibit a strong connection to the natural surroundings, cultural scenery, and historical backdrop of a city. Together, these elements create the distinctive skyline, street views, and public spaces that define an urban area. Through their individual architectural designs, material choices, and attention to detail, such structures reveal the evolutionary path and cultural traits of the city across various historical eras. The significance of preserving traditional architecture is further highlighted in its role in defining urban spatial patterns and visual environments, as well as fostering social frameworks and community unity within cities. Safeguarding traditional architecture means upholding the identity, uniqueness, and cultural legacy of a city while establishing a robust basis for its sustainable progress and cultural continuity ^[3].

The adaptation of traditional architecture involves more than just the physical renewal and functional enhancement of structures; it also signifies utilizing innovative design and technological integration to ensure that these architectural elements align with urban development requirements. This process fosters a balanced coexistence between historical significance and contemporary needs. Revitalizing historic buildings contributes to elevating the overall appearance and quality of a city. By reconfiguring the spatial arrangements and upgrading the functionalities of these structures, they can be made more compatible with modern urban lifestyles, as referenced in ^[4].

1.3. Ecological, environmental protection and sustainable development

The preservation and restoration of traditional structures can contribute to minimizing environmental harm. Numerous historic buildings were originally designed with eco-friendly principles, such as natural ventilation systems, efficient use of daylight, and sustainable materials, all of which play a role in decreasing energy usage and pollution levels. By maintaining and upgrading these structures, we can preserve and promote these environmentally conscious ideas while advancing the growth of sustainable architecture. Additionally, it is essential to minimize demolition and reconstruction waste to mitigate any adverse effects on the environment.

The preservation and revitalization of traditional structures can play a crucial role in driving urban regeneration and fostering community progress. As urbanization continues to accelerate, numerous historic buildings face the threat of demolition. Nevertheless, these architectural landmarks represent more than just cultural legacies; they also serve as vital components of their respective communities. By restoring and repurposing them, new vitality and utility are introduced into these structures, transforming them into focal points that connect and engage community members, thereby encouraging interaction among residents. Such efforts not only sustain the unity and identity of the community but also support the long-term ecological and economic sustainability of urban environments ^[5].

2. Challenges and dilemmas faced by traditional architecture

2.1. The impact of modernization

The swift advancement of modernization has significantly influenced traditional architecture. As urbanization proceeds at an accelerated pace, numerous traditional structures have been torn down to make way for contemporary skyscrapers and infrastructure. This cycle of destruction and rebuilding not only results in the erosion of historical and cultural heritage but also contributes to the fading of community memories and the sense of belonging embedded in these traditional buildings. Many historic structures have been overlooked or pushed to the periphery during the push for modernization, with their historical importance and cultural contributions remaining underappreciated and undervalued ^[6].

The push for modernization has also led to transformations in people's lifestyles. Contemporary living emphasizes functionality, ease, and comfort, whereas traditional structures frequently fail to align with these requirements. For instance, the interior features of older buildings might not accommodate the lifestyle preferences of today's individuals and may be lacking in modern amenities and technology. As a result, numerous individuals have come to prefer modern residences and constructions in their quest for a higher quality of life, causing traditional buildings to become increasingly obsolete or neglected.

2.2. Disrepair and potential safety hazards

Deterioration stands as one of the primary challenges confronting traditional structures. Owing to historical contexts, numerous traditional buildings were constructed without the benefit of contemporary materials and technological advancements, leading to comparatively weaker structural integrity and limited durability. As years go by, these constructions have increasingly encountered issues like cracked walls, leaking roofs, and deteriorated wooden elements. Should these concerns remain unaddressed, they could pose significant risks to the buildings' structural stability. Additionally, neglect can cause the building's internal systems to become outdated, failing to accommodate modern living requirements and ultimately accelerating the disuse and desertion of traditional architecture ^[7].

Another significant challenge for traditional buildings lies in their concealed safety risks. Due to their unique structural and material properties, these buildings are often more susceptible to both natural calamities and human-induced damage. For instance, timber-framed structures are especially prone to fire hazards, and in the event of a fire, it can spread rapidly, leading to substantial loss of life and property. Additionally, traditional buildings exhibit weaknesses in terms of earthquake resistance, which may result in building failures and casualties during seismic events ^[8].

2.3. Lack of cultural awareness and weak protection awareness

The deficiency in cultural awareness is primarily manifested through the undervaluation and misinterpretation of traditional architecture's significance. Influenced by modernization, individuals often favor contemporary and innovative architectural designs, perceiving traditional structures as "antiquated" or "traditionalist." This mindset results in the underappreciation of the historical, cultural, and artistic worth of traditional buildings, sometimes even questioning their necessity. Consequently, there is a diminished sense of responsibility regarding the preservation of traditional architecture ^[9]. On one hand, many people lack fundamental knowledge and accountability for safeguarding these structures, treating them as expendable cultural emblems while disregarding their role as invaluable heritage. On the other hand, governmental bodies and related organizations exhibit

shortcomings in preserving traditional buildings. In certain regions, the absence of comprehensive conservation plans and efficient oversight systems has created numerous obstacles in protecting these structures. The shortfall in cultural understanding and the weakened commitment to preservation not only jeopardize the safety and completeness of traditional architecture but also risk losing the historical and cultural data embedded within them. This loss, in turn, hinders the continuation and evolution of national culture^[10].

3. Strategies and methods for the protection and transformation of traditional architecture

3.1. Strengthening laws and regulations

The government has issued the Law of the People's Republic of China on the Protection of Cultural Relics, along with other relevant laws and regulations, which classify traditional buildings as immovable cultural relics under legal safeguarding. These legislative measures establish a fundamental legal structure and foundation for preserving traditional buildings. Furthermore, locally-focused normative documents can also be developed, allowing for more tailored approaches that align with regional circumstances, thereby enhancing the regulatory protection of traditional buildings^[11].

The government ought to reinforce legal enforcement in safeguarding traditional structures, suppress any unlawful destruction of these buildings, and uphold the seriousness and authority of relevant laws. Furthermore, it is essential for the government to enhance the training and supervision of legal enforcement officers to elevate their professional skills and enforcement capabilities. Additionally, through diverse methods and channels, there should be increased promotion and dissemination of regulations concerning the protection of traditional buildings. This will contribute to raising public awareness and comprehension of these laws, fostering a stronger legal consciousness among citizens, and encouraging the development of a positive environment where society collectively participates in preserving traditional architecture^[12].

3.2. Raise the awareness of protection and strengthen publicity and education

To enhance the consciousness of preservation, it is crucial to begin with children by integrating traditional architecture protection knowledge into the educational system. By utilizing classroom instruction, extracurricular activities, and other methods, children can be exposed to and comprehend the historical, cultural, and artistic significance of traditional structures at an early stage, fostering their sense of belonging and pride in traditional culture.

To reinforce outreach and education, modern media platforms should be utilized. By constructing a comprehensive and multi-dimensional promotional network through television, radio, the Internet, and social media, the grace and allure of traditional buildings can be engagingly showcased. Through the creation of specialized documentaries, online tutorials, WeChat official account articles, live interactions, and other formats, the narratives and significance behind these structures are shared, drawing greater public interest and encouraging participation in preservation efforts^[13].

Hosting vibrant public engagement activities serves as a practical method to enhance awareness regarding preservation. For instance, events such as traditional architecture photography contests, hand-drawn map competitions, and cultural festivals can be organized to inspire the public to document and convey their appreciation for traditional structures through diverse means. Concurrently, it is essential to develop a volunteer service framework that enlists individuals passionate about traditional culture to partake in the routine upkeep,

interpretation, and tours of historical buildings. This enables conservation efforts to function as a crucial avenue for community members to contribute to social welfare and achieve personal fulfillment.

3.3. Establish a list and archives for the protection of traditional buildings

Creating an inventory of traditional buildings for preservation involves officially recognizing and documenting structures that possess historical, artistic, and scientific significance. This inventory typically includes details such as the name, location, age, architectural style, and historical-cultural importance of each building. By identifying structures that meet specific criteria and including them in the register of Notable Historic Buildings, these sites can receive the recognition and safeguarding they require. Such criteria encompass representing local history, showcasing architectural artistry, and embodying the historical and cultural traits of regional architecture. Once a building is added to this register, it cannot be modified without approval and is subject to stringent protective measures ^[14].

Simultaneously, creating archives for traditional structures is a crucial aspect of preservation efforts. The content of these archives should encompass comprehensive details about the building, including its historical context, architectural features, artistic embellishments, and maintenance history, among others. Such information can be documented and preserved in diverse formats, such as written descriptions, diagrams, photographs, and visual recordings. Establishing these archives not only aids in comprehending the historical evolution and present condition of the structure but also furnishes a reliable foundation for future preservation and restoration endeavors. For instance, prior to restoring ancient edifices, it is essential to document their original appearance, gather restoration data meticulously, and prepare necessary materials, thereby ensuring a solid foundation for the restoration initiative. Additionally, monitoring and archiving records generated during the upkeep of historical buildings—such as restoration strategies, design blueprints, and implemented measures—are integral components of archive preservation.

3.4 Reconstruction methods and case analysis

3.4.1. Preliminary assessment and planning

Prior to transforming a conventional structure, a comprehensive evaluation and strategic planning are essential. This involves a detailed examination of the building's historical context, cultural significance, architectural integrity, and possible functional requirements. Through this analysis, it becomes feasible to identify which components should be conserved and which areas require renovation or modernization. Additionally, during the planning phase, consideration must also be given to how the refurbished structure will harmonize with its surroundings and promote sustainable development. For instance, in the restoration of an old cottage on Gaoyou Road in Shanghai, the designers preserved the prominent chimneys and weathered walls while incorporating materials and hues in the new sections that complement the original building. As a result, the renovated structure maintains its historical allure while seamlessly integrating with the surrounding landscape ^[15].

3.4.2. Structural reinforcement and restoration

The reinforcement and restoration of traditional structures represent a critical stage in the renovation process. This involves employing contemporary materials and techniques to strengthen essential elements like walls, beams, columns, and foundations, thereby ensuring the building's overall stability. Additionally, damaged or deteriorated components must be meticulously repaired or replaced to restore their original functionality and aesthetic appeal.

For instance, during the renovation of Fujian Province's tulou, designers utilized modern resources and methods to fortify walls, beams, and columns due to their intricate construction and historical age. Simultaneously, damaged elements such as tiles, doors, and windows were carefully restored or substituted. In another case, the design team for the Shenshanling Comprehensive Service Center proposed integrating the building into ecological restoration efforts by addressing a 15-meter-high exposed slope. Through a stepped-back design approach, they connected the structure with the natural mountain terrain, creating open outdoor spaces while transforming the building into an extension of the natural landscape.

3.4.3. Function update and space optimization

Traditional structures frequently embody a wealth of historical and cultural significance; however, in contemporary settings, their functional demands may evolve. Consequently, during restoration projects, it is essential to modernize and enhance the building's functionality based on practical requirements while optimizing its spatial layout. For instance, the Qianyang Farmer's Market, initially comprising two dilapidated old residences, has been reimagined as a cutting-edge rural public service complex. This facility now incorporates functions such as promotional exhibitions, an e-commerce hub, agricultural education programs, online and offline trading of local goods, and immersive agritourism experiences. Through the creation of new walkways and small pavilions, the designers successfully linked the two residential units, thereby crafting a harmonious blend of indoor and outdoor spaces that interweave old and new elements, offering diverse vistas.

4. Conclusion

The preservation and adaptation of traditional architecture serve as crucial approaches for achieving cultural heritage and sustainable development. By implementing thoughtful conservation strategies and adaptive reuse techniques, it is possible to maintain the historical essence and cultural identity of these structures while endowing them with contemporary functions and renewed relevance. Moving forward, there should be an ongoing emphasis on researching the preservation and adaptation of traditional buildings to foster the continuation and evolution of architectural culture. In this endeavor, focus should extend beyond physical preservation to uncover and perpetuate the underlying cultural significance, ensuring that traditional architecture acts as a link between history and modernity, providing invaluable legacy for future generations.

Disclosure statement

The author declares no conflict of interest.

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