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A Study on the Protection Strategies of Historical Buildings in Longshengzhuang Commercial Area, Inner Mongolia, Based on Comprehensive Value Grading

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KEYWORDS**ABSTRACT***Historical buildings and shops;**Comprehensive value classification;**Protection strategies;**Longshengzhuang;*

Commercial historical buildings, as products of the fusion of commercial activities and historical culture, possess unique architectural styles and profound historical connotations. They are not only a key component of cultural heritage but also witnesses to urban history and culture. This paper takes the historical buildings of Longshengzhuang Commercial Area as its research object, constructing a comprehensive value evaluation system for these buildings based on seven indicators: historical value, scientific value, artistic value, commercial value, social value, surrounding spatial environment, and surrounding cultural environment. The system evaluates and delineates the protection levels of the Longshengzhuang Commercial Area historical buildings, proposing graded protection measures from three dimensions: overall protection strategy, protection objectives, and specific measures.

INTRODUCTION

The "Guiding Opinions on Strengthening the Protection and Inheritance of Historical and Cultural Heritage in Urban and Rural Construction" clearly states that "a graded protection system should be established for historical buildings." The basis of this graded protection system is a comprehensive and integrated assessment of the value of historical buildings, but currently there is a lack of a sound comprehensive value assessment system to support this work. Different historical buildings also have significant differences in cultural value, degree of damage, and protection measures, which brings certain difficulties to the protection work [1]. The earliest domestic research on the comprehensive evaluation of historical buildings can be traced back to Zhu Guangya [2]'s comprehensive evaluation of Suzhou historical buildings. Subsequently, different scholars have continuously optimized and improved the different types of heritage [2-3], protection processes [4-5], protection carriers [6-7], evaluation methods [8-9], and evaluation standards [10-11]. As a product of the integration of commercial activities and historical culture, the historical buildings of shops have

unique architectural styles and profound historical connotations. They are not only a key component of historical and cultural heritage, but also witnesses of urban history and culture, and have irreplaceable significance in urban development, but they have received little attention from the academic community, and research on the comprehensive value evaluation of historical buildings of shops is also blank. Therefore, this paper takes the historical buildings of Longshengzhuang Commercial Building in Inner Mongolia as the research object, scientifically evaluates their comprehensive value, classifies them into protection levels according to their comprehensive value, and proposes targeted hierarchical protection strategies, which have certain reference value for the local government's scientific decision-making and precise implementation of protection policies for historical buildings of commercial buildings.

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1. Current Status of Historical Commercial Buildings in Longshengzhuang

Buildings in Longshengzhuang Commercial Area

1.1. Current Quality of Historical Commercial Buildings

Based on the damage to the building exteriors, structural characteristics, and maintenance conditions, the current quality of the 192 existing historical commercial buildings in Longshengzhuang was categorized into three levels: good, average, and poor, and statistical analysis was conducted, as shown in Table 1. Overall, the quality of the 192 existing historical commercial buildings in Longshengzhuang is not optimistic, generally being poor. Due to the outflow of local residents, some historical commercial buildings have been left unattended and have fallen into disrepair, resulting in collapses or even demolition. Furthermore, these historical commercial buildings are wooden structures, and after years of weathering, their columns and beams have developed cracks and decay, seriously affecting the structural safety of the buildings. In addition, some villagers failed to follow reasonable structural design principles when carrying out construction, renovation, and expansion work, resulting in unreasonable building structures and unstable connections, further exacerbating the decline in building quality.

1.2. Current Status of Protection of Historic Commercial Buildings

Based on maintenance frequency and methods, the 192 existing historical commercial buildings in Long Sheng Zhuang are divided into four levels: well-preserved, moderately preserved, poorly preserved, and unpreserved, as shown in Table 2. Overall, the preservation status of the historical commercial buildings in Longshengzhuang is worrying, generally considered poor. None of the existing historical commercial buildings are regularly maintained using the original structure, materials, and techniques; only 3.65% of residents have carried out structural reinforcement, wall painting, and roof tile replacement; 79.69% of residents only perform unprotected repairs when problems arise; and 16.66% of residents have no protective measures, allowing the buildings to deteriorate. This indicates that the local government does not prioritize the preservation of historical buildings, and while most residents do repair them, they lack awareness of the importance of protecting them.

Classification	Features	Proportion	Image
Good quality	The building's exterior showed no obvious damage, its structure was stable, and it had not been altered or expanded.	7.3%	
Poor quality	The building's exterior was partially damaged, but the overall structure was preserved.	35.9%	
of poor quality ;of low quality	The building is dilapidated and has significant structural safety hazards, making repairs extremely difficult.	56.8%	

Table.1. Classification of the Current Quality of Historical

Classification	Features	Proportion
Good protection	Regular maintenance should be carried out on the building according to its original structure, raw materials, and processes to maintain its appearance and functionality.	0%
General protection	The building is not maintained regularly according to its original structure, materials, and techniques, but repairs such as structural reinforcement, wall repainting, and roof tile replacement are carried out.	3.65%
Poor protection	Maintenance is performed irregularly, only when issues such as water leakage or power outages occur, and does not provide protection for the building itself.	79.69%

unprotecte dness	No maintenance, no protection for the building, and it is left to be damaged.	16.66%
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Table.2.Classification of the Current Status of the Protection of Historical Buildings in Longshengzhuang Commercial Area

2. Construction of a comprehensive value evaluation system

2.1. Statistical analysis and screening of indicator factors

The relevant standards, international charters, and academic research [12-15] involved in the current evaluation of architectural heritage were summarized. The data were statistically analyzed and screened from the perspectives of the building's intrinsic value and external environment. Similar indicators and factors in the literature were integrated to form a comprehensive value evaluation system for commercial historical buildings, which consists of 7 primary indicators (historical value, scientific value, artistic value, commercial value, social value, surrounding spatial environment, and surrounding cultural environment) and 42 corresponding secondary indicators, as shown in Table 3.

2.2. Determining the weight of comprehensive value indicators

To ensure the credibility of the evaluation system, this study consulted several experts and scholars with some understanding of Longshengzhuang, including university teachers, cultural relic preservation workers, government officials, and respected local residents. A total of 25 questionnaires were distributed, and 21 valid questionnaires were collected. The results of the questionnaires were used to construct a judgment matrix using the weighted geometric mean method and passed a consistency check, as shown in Table 3.

target layer	Primary indicators and weights	Secondary indicators and weights
The Comprehensive Value of Commercial	historical value (0.2256)	historical age (0.0569)
		completeness of historical records (0.0236)
		integrity of building (0.0393)

Historic Buildings	Historic Buildings	post-construction alteration degree (0.0432)
		characteristic reflectance (0.0327)
		Historical event relevance (0.0163)
		preservation degree of ancillary relics (0.0136)
	Scientific Value (0.1253)	Structural technical features (0.0519)
		Construction process characteristics (0.0397)
		Local material characteristics (0.0337)
	artistic value (0.1413)	Local cultural characteristics (0.0284)
		Spatial layout effect (0.0335)
		architectural space characteristics (0.0315)
		architectural detail decoration (0.0327)
		architectural style typical (0.0152)
	commercial value (0.2009)	Commercial function (0.0315)
		exploring potential,developing potential (0.0306)
		Property status (0.0210)
commercial space utilization (0.0661)		
Business scale (0.0517)		
social value (0.1209)	reflecting folk customs (0.0137)	
	social emotional attachment (0.0186)	
	Vitality of public space (0.0148)	
	local identity (0.0357)	
	diversity of public space (0.0207)	
	group cohesiveness (0.0174)	
Surrounding spatial environment (0.1024)	Location conditions of the building (0.0129)	
	coordination of surrounding building forms (0.0138)	
	The Characteristic of Surrounding Space Layout (0.0109)	

		integrity of the surrounding architectural style (0.0173)		earlier periods		49)	
		Infrastructure completeness (0.0156)	completeness of historical records	There are detailed records.	There are rough records.	Some records exist.	ahistoric
		spatial environmental variability (0.0186)	integrity of building exterior	Very complete	Relatively complete	Generally complete	bug, imperfect
		Age of Surrounding Buildings (0.0133)	post-construction alteration degree	Unchanged	Minor changes	Major changes	Significant changes
	The surrounding environment (0.0836)	The richness of related folk customs and cultural activities (0.0128)	characteristic reflectance	Very strong	Relatively strong	Generally strong	Not strong
		Population size and structure (0.0115)	Historical event relevance	Very relevant	Compare	general relevance	
		The degree of residents' cognition of historical buildings (0.0131)	preservation degree of ancillary relics	beyond compare	Better	Generally good	bad
		Residents' willingness to protect historical buildings (0.0108)	Structural technical features	Very distinctive	More distinctive	Generally distinctive	without colour
		The Protection Mode of Historical Buildings by the Residents (0.0096)	Construction process characteristics	Very distinctive	More distinctive	Generally distinctive	without colour
		Frequency of neighborhood interactions among surrounding residents (0.0085)	Local material characteristics	Very distinctive	More distinctive	Generally distinctive	without colour
		Average income level of surrounding residents (0.0076)	Local cultural characteristics	Very strong	Relatively strong	Generally strong	Not strong
		Average educational level of surrounding residents (0.0097)	Spatial layout effect	Very strong	Relatively strong	Generally strong	Not strong
			architectural space characteristics	Very strong	Relatively strong	Generally strong	Not strong

Table.3.Comprehensive Value Evaluation Table of Historical Commercial Buildings

2.3. Evaluation system scoring criteria

The qualitative results are transformed into quantitatively evaluable indicators using the fuzzy evaluation method. In order to eliminate the influence of different dimensions, all evaluation indicators are divided into different levels for evaluation, and a four-level scoring method (0-1, 2-4, 5-7, 8-10) is adopted.

Evaluation factor	score			
	8-10	5-7	2-4	0-1
historical age	The Ming Dynasty and	Qing Dynasty	the Republic of China (1912-19	New China is established

tics					the surrounding buildings				
architectural detail decoration	Very strong	Relatively strong	Generally strong	Not strong	The Characteristic of Surrounding Space Layout	Very strong	Relatively strong	Generally strong	Not strong
architectural style typical	Very strong	Relatively strong	Generally strong	Not strong	integrity of the surrounding building style	Very strong	Relatively strong	Generally strong	Not strong
Commercial function	Very strong	Relatively strong	Generally strong	Not strong	Infrastructure completeness	Very perfect	perfect	General improvement	faultiness
exploring potential, developing potential	Very strong	Relatively strong	Generally strong	Not strong	spatial environmental variability	No changes	Minor changes	General changes	Significant change
Property status	country	unit or collective	personal	not quite clear	Age of Surrounding Buildings	The Republic of China and before	1949-1980	1980-2000	After 2000
建筑空间利用率	Very strong	Relatively strong	Generally strong	Not strong	Folk Custom and Cultural Activity Richness	Very strong	Relatively strong	Generally strong	Not strong
Business scale	More than 200 square meters	150-200 square meters	100-150 square meters	Under 100 square meters	Surrounding population scale	300 More than one person	200-300	100-200	Under 100 people
reflecting folk customs	Very strong	Relatively strong	Generally strong	Not strong	The awareness of historical buildings among the surrounding residents	Very high	high	Generally high	No high
social emotional attachment	Very strong	Relatively strong	Generally strong	Not strong					
Vitality of public space	Very strong	Relatively strong	Generally strong	Not strong					
local identity	Very strong	Relatively strong	Generally strong	Not strong					
diversity of public space	Very strong	Relatively strong	Generally strong	Not strong					
group cohesiveness	Very strong	Relatively strong	Generally strong	Not strong					
Location of the building	Very strong	Relatively strong	Generally strong	Not strong					
coordination of the architectural style of	Very strong	Relatively strong	Generally strong	Not strong					

Residents' willingness to protect historical buildings	Very strong	strong	Generally strong	No strong
Resident's Protection Mode of Historic Buildings	Very familiar	Familiar	Generally familiar	No familiar
Frequency of neighborhood interactions among surrounding residents	Very frequent	Frequent	Frequently	Not frequent
Average income level of surrounding residents	More than 3000 yuan	2000-3000 yuan	1000-2000 yuan	Under 1000 yuan
Average educational level of surrounding residents	Bachelor's degree or above	junior college	senior school	High school and below

Table.4. Table of Indicator Scores for Comprehensive Value Evaluation System of Historical Buildings

2.4. Comprehensive Value Grading of Historic Commercial Buildings

Each historic commercial building was scored according to the indicator scoring table and classified into four levels of protection: I, II, III, and IV.

order of evaluation	Evaluation score	Commercial Historic Building Number
Historic buildings of Grade I	75 < score ≤ 100	A12, A21

Historic building Grade II	50 < score ≤ 75	A22, A41, A54, A55, A75, A76, A77, F5, I12, L8, L11, L66
Historic building Grade III	25 < score ≤ 50	A17, A24, A52, A84, E64, J45, K5, L10, L65, L67, L68, L69
Historic building Grade IV	0 ≤ score ≤ 25	A1, A2, A3, A9, A10, A11, A16, A19, A20, A25, A39, A40, A42, A46, A50, A51, A57, A58, A59, A60, A61, A63, A64, A65, A66, A67, A68, A69, A71, A72, A73, A74, A79, A80, A82, A83, A85, A87, A88, F3, F6, F15, F16, F17, F18, F19, F20, F21, F22, F23, F24, F28, F33, F34, F35, F36, F37, F38, F40, F41, F47, I41, I42, I43, J46, J47, J48, J71, J72, J73, J74, K1, K2, K3, K7, K12, L1, L2, L3, L4, L5, L6, L7, L9, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L39, L40, L41, L42, L43, L44, L45, L48, L49, L54, L57, L58, L59, L60, L61, L62, L63, L64, L70, L71, L72, L73, L74, L75, L76, L77, L79, L80, L82, L83, L84, L85, L87, L88, L89, L90, L91, L93, L95

Table.5. Comprehensive Value Grading Table for Historic Buildings

2.5. Historical building classification protection strategy

For different historical building grades of Longshengzhuang shops, specific protection measures are proposed from three aspects: overall strategy, protection objectives and specific measures.

grade	wholistic strategy	protected object	concrete measure				enhance the professional standards of restoration and preservation efforts.
First-class historical building	Strict protection and preservation of the original appearance	Ensure the integrity of the original structure, materials, and historical information of the historic building.	All renovation, expansion, or demolition activities are strictly prohibited except for necessary maintenance and repairs. The original state of the building shall be preserved. A professional maintenance team shall be established to conduct regular structural inspections, repairs, and upkeep, ensuring the building's safety and stability. Real-time monitoring of the surrounding environment is required to prevent damage from external factors such as pollution and vibrations. Grade I protected historical buildings shall be incorporated into legal protection frameworks, with a stringent regulatory mechanism established to rigorously combat illegal activities.	Grade III historical building	Preserve the landscape and renew moderately	On the basis of maintaining the features of the historic architecture, the building should be updated and transformed moderately to meet the needs of modern life.	Identify the distinctive features of historical buildings, including architectural styles, colors, and materials. During renovation and upgrading, implement a design review mechanism to ensure projects harmonize with the historical architecture's character, preventing damage to its overall aesthetic. Encourage diverse functional uses such as commercial, office, and residential spaces to enhance the buildings' multifunctionality and vitality. Promote public participation through methods like open bidding and community discussions, while establishing a supervision system to guarantee compliance with renovation standards.
Secondary historical buildings	moderate repair and functional activities	On the basis of protecting the style and core value of the historic building, the building should be restored and functionally transformed to improve its use value.	Develop a detailed restoration plan to meticulously repair the damaged sections of the building while preserving its overall architectural character. Implement appropriate functional adaptations—such as converting it into a museum, library, or cultural center—without compromising its historical integrity. Revitalize the building through community engagement by encouraging residents to participate in conservation and utilization activities. Organize cultural events and lectures to transform the historic structure into a vibrant community hub. Provide technical support and training to	Level 4 historical building	Flexibility in the use of architectural style	On the basis of maintaining the continuity of historical features, the historical buildings should be used and developed more flexibly to promote the inheritance and innovation of culture.	Develop a style continuity plan to ensure new construction or renovation projects harmonize with historical buildings in terms of style, scale, and color, creating a unified architectural character. Encourage innovative functional uses such as creative industries, art studios, and homestays to promote the integration of historical buildings with modern life. Provide policy support and incentives, including tax benefits and financial subsidies, to encourage private capital participation in the preservation and utilization of historical buildings. Strengthen the cultural heritage and educational functions of historical buildings through

			cultural activities, exhibitions, and educational programs, thereby enhancing public historical and cultural literacy.
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Table 6. Table of Classified Protection Measures for Historic Commercial Buildings

Conclusion

Historical commercial buildings serve as tangible witnesses to economic development, acting not only as venues for trade but also as important platforms for cultural exchange, thus possessing unique historical value. Conducting comprehensive value assessments of these buildings, assigning them different protection levels, and proposing tailored protection strategies allows for protection work to be tailored to the specific architecture, which is of profound significance for the scientific formulation and precise implementation of protection policies for various types of historical buildings.

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