



## Research on the Design of Experiential Renovation of Rural Residential Buildings in Inner Mongolia

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**Abstract:** This research explores the experiential renovation design for rural residential buildings in Inner Mongolia, aiming to revitalize rural areas and develop the tourism industry while preserving traditional culture. It incorporates literature review, field study, and case analysis to explore design principles, strategies, and practices applicable to the region. The overview of rural dwellings in Inner Mongolia emphasizes geographical variation, ethnicity, ecological adaptability, use of local materials, architectural forms, spatial layout, and symbolic meanings. The proposed design principles prioritize respect for tradition, environmental sustainability, enhanced comfort and practicality, integration of modern technology, fostering regional interaction, and improving the tourism experience. Two case studies illustrate the pre-renovation analysis, design schemes, and effects of renovating a village residence in Tengke and a yurt tourism village in Tsarsen. The schemes involve preserving traditional features, adopting green technologies, adding modern facilities, and enhancing visitor experiences. Suggestions for operation and management include exploring operation modes, integrating tourism resources, promoting community participation, implementing effective marketing strategies, providing training programs, establishing supervision mechanisms, and conducting evaluations. The research acknowledges limitations and proposes future research directions, including further exploration of rural dwelling diversity, integration with other fields, practical exploration, sustainability considerations, and in-depth study of operation and management mechanisms.

Keywords: experiential renovation, rural residential buildings, Inner Mongolia, traditional culture, tourism industry

### Introduction

In the face of rapid urbanization, rural areas across the globe are grappling with significant challenges, including population exodus, environmental degradation, and cultural erosion. Inner Mongolia, a region characterized by diverse geographical landscapes and rich ethnic diversity, is no exception. As rural communities strive for revitalization and sustainable development, the experiential transformation design of rural residential buildings emerges as a critical avenue to enhance their attractiveness and vitality<sup>[1]</sup>. This research focuses on understanding and exploring the methods and strategies for experiential renovation of rural residential buildings in Inner Mongolia. By delving into the unique characteristics of rural dwellings and their symbiotic relationship with the environment and cultural heritage, this study aims to contribute valuable insights for rural revitalization efforts, foster sustainable tourism industry development, and preserve the traditional culture deeply embedded in rural dwellings.

### II. Rural Dwellings in Inner Mongolia:

Inner Mongolia, located in the northern part of China, is a region known for its diverse landscapes and rich cultural heritage.<sup>[2]</sup> The rural residential architecture in Inner Mongolia reflects the unique geographical environment and the coexistence of multiple ethnic groups, making it a fascinating subject of study.<sup>[3]</sup>

Geographical Environment and Climate Characteristics:

Inner Mongolia's geographical environment is characterized by a mix of plateaus, basins, and deserts, creating a diverse landscape that influences the design of rural dwellings. The region experiences a typical continental climate with cold winters and hot summers, posing specific challenges for architectural adaptation<sup>[4]</sup>. The extreme weather conditions necessitate the use of materials and architectural features that provide excellent heat insulation and resistance to harsh elements.<sup>[5]</sup>

Historical and Cultural Background:

The rich history of Inner Mongolia is intertwined with its cultural diversity, fostering a vibrant blend of traditions and architectural styles. Rural residential buildings in the region, such as yurts and adobe houses, reflect the historical interactions and influences of different ethnic groups. The nomadic lifestyle of the Mongolian people has given rise to the iconic portable yurts, while the Han ethnic group's settled lifestyle has shaped dwellings with courtyard spaces for community gathering and privacy.<sup>[6]</sup>

Characteristics of Rural Residential Architecture:

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The rural residential architecture in Inner Mongolia exhibits distinctive regional and ethnic characteristics due to the interplay of geography and culture. The diverse natural conditions across grasslands, deserts, and mountains have led to variations in rural dwellings. Yurts dominate the grassland area, while adobe houses and kilns are prevalent in the desert regions. The dwellings' materials also align with the local resources, with grassland yurts utilizing wood and wool felt, while adobe houses in the desert area utilize loess and sand.<sup>[7]</sup>

### **III. Study Design:**

The research employs a comprehensive approach to investigate the experiential renovation design of rural residential buildings in Inner Mongolia. The study will be divided into three main phases:

1. Literature Research: The initial phase involves an extensive literature review to gather insights into the theories, concepts, and best practices related to experiential transformation design in rural contexts. Scholarly articles, books, conference papers, and official reports will be reviewed to establish a strong theoretical foundation.
2. Field Study: In the second phase, on-site field studies will be conducted in select rural communities across Inner Mongolia. These field visits will enable firsthand observation and documentation of various rural residential buildings, such as yurts and adobe houses. Data will be collected through surveys, interviews with local residents, and documentation of architectural features and spatial layouts. Moreover, environmental factors and geographical variations impacting the architectural design will be assessed during the field study.
3. Case Study: The third phase involves conducting in-depth case studies of successfully renovated rural residential buildings that have incorporated experiential design principles. These case studies will highlight the implementation of cultural preservation, sustainable architectural practices, and their impact on rural revitalization. Comparative analyses will be performed to identify successful design strategies and lessons learned from different cases.

#### **Design Principles of Experiential Transformation for Rural Residential Buildings in Inner Mongolia:**

The experiential transformation of rural residential buildings in Inner Mongolia requires a careful balance between preserving traditional cultural features and meeting the demands of modern life and tourism. To achieve this, the following design principles are proposed:

1. Respect and Protect Traditional Cultural Features: A key principle in the transformation process is to respect and protect the traditional cultural elements of rural dwellings. This involves preserving the architectural style, decorative elements, and spatial layout that reflect the history, culture, and traditional craftsmanship of Inner Mongolia. The design should emphasize the uniqueness of different ethnic groups and regions, showcasing their distinctiveness and local identities through the renovation.
2. Prioritize Environmental Sustainability: With environmental conservation in mind, the renovation design must prioritize sustainability. This entails minimizing energy consumption, enhancing environmental quality, and adopting eco-friendly building materials. By making reasonable use of local natural resources and the ecological environment, the transformation can minimize its ecological footprint and contribute to the overall preservation of the region's natural beauty.
3. Enhance Living Comfort and Practicality: The transformation should focus on enhancing the living conditions and practicality of rural dwellings. Improving indoor air quality, natural lighting, and insulation will create comfortable and healthy living environments. Furthermore, the integration of modern facilities, such as bathrooms and kitchens, is essential to meet the needs of contemporary living while retaining the charm of traditional rural life.
4. Integrate Modern Technology and Intelligent Systems: While preserving traditional features, integrating modern technology and intelligent systems can elevate the living experience. Implementing smart home systems and green energy technologies not only increases efficiency but also showcases the harmonious coexistence of traditional and modern elements within the rural residential environment.
5. Foster Regional Interaction and Communication: The renovation design should foster regional interaction and communication. By creating public spaces and facilities with local characteristics, the transformation can attract visitors and encourage their active participation in the experience. Engaging local communities in the transformation process can strengthen their sense of belonging and promote the sharing of cultural heritage with visitors.
6. Enhance the Tourism Experience Function: Recognizing the tourism potential of rural residential houses, the transformation should consider specific design solutions to enhance the tourism experience. The establishment of special bed and breakfast accommodations, farmhouses, and cultural creative spaces can attract tourists and promote the development of the rural tourism industry, contributing to the economic growth and sustainability of the region.

### **Part IV: Experiential Renovation Design Scheme and Practice**

4.1 Case 1: Renovation of Tengke Village Residence in Tengke Town, Hulunbeier City, Inner Mongolia Autonomous Region, Molidawa Dahaner Autonomous Banner

#### **4.1.1 Pre-renovation Analysis:**

The village is located near a tourist attraction in the Inner Mongolia region, offering rich tourism resources and potential. However, due to the lack of suitable accommodation facilities, tourists are unable to experience the local folk culture.

#### 4.1.2 Renovation Design Scheme:

The renovation design scheme for traditional dwellings includes several key elements. Firstly, there is a focus on preserving and restoring the architectural style, decorative elements, and spatial layout of these historical structures. Secondly, the use of environmentally friendly building materials and technologies is emphasized to improve the energy efficiency of the dwellings. Thirdly, modern facilities like bathrooms and kitchens are added while ensuring the essence of tradition is maintained. Additionally, a smart home system is integrated to elevate the overall living experience. Moreover, there are plans for establishing special bed and breakfast accommodations, farmhouses, cultural and creative spaces, aimed at enhancing visitor participation and experience. Lastly, the active involvement of community residents in the renovation process is encouraged, promoting the sharing of local culture and stories.

#### 4.1.3 Renovation Implementation and Effects:

The renovation efforts have yielded several significant benefits for the traditional farmhouses. Firstly, structural repair and reinforcement have resulted in improved stability and safety, offering residents a greater sense of security. Secondly, the implementation of heat insulation and preservation treatments, along with the renewal of roofing materials, has significantly enhanced the energy efficiency of the farmhouses, leading to substantial energy savings and reduced emissions. Lastly, the preservation of historical and cultural characteristics during the renovation process has transformed these farmhouses into popular rural tourist attractions, consequently boosting the development of local tourism.

### 4.2 Case 2: Renovation of Yurt Tourism Village Residence in Tsarsen Town, Xinqin Right Wing Front Banner, Inner Mongolia Autonomous Region

#### 4.2.1 Pre-renovation Analysis:

The village is situated in the grassland of the Inner Mongolia region and features a unique yurt architectural style. However, due to the lack of modern facilities, tourists are unable to enjoy comfortable accommodations.

#### 4.2.2 Retrofitting Design Scheme:

The preservation and restoration of traditional features of yurts, encompassing architectural forms and decorative elements, is complemented by the optimization of insulation performance, ensuring enhanced living comfort. Moreover, modern facilities like bathrooms and kitchens are added to the yurts, while green energy technology is implemented to improve energy utilization efficiency. To enrich the activities available to visitors, grassland experience areas and cultural performance areas are created. Throughout the renovation process, local herders are actively encouraged to participate, facilitating the sharing of grassland culture and lifestyle.

#### 4.2.3 Implementation and Effects of Renovation:

In terms of implementation and effects of renovation, several positive outcomes were observed. Firstly, the renovation efforts led to improved comfort within the yurts by enhancing insulation materials, resulting in a stable interior temperature that keeps the residents warm during winter and cool during summer, thus significantly enhancing the overall living experience. Secondly, the introduction of independent bathrooms and modern kitchens brought convenience and an improved quality of life to the residents, as they now have access to modern living facilities. Lastly, the incorporation of green landscapes and public activity areas created additional shared community spaces, promoting socializing and relaxation among residents and fostering stronger community interaction and cohesion.

## **Part V: Operation and Management of the Renovated Rural Dwellings**

To ensure the continued value of the renovated rural dwellings, the following suggestions are proposed for their operation and management:

### 5.1 Exploration of Operation Modes:

Different operation modes, such as bed and breakfast accommodations, farmhouses, and specialty restaurants, can be explored to cater to the diverse needs of tourists. Additionally, active participation of community residents is encouraged to establish a shared economy model and improve the income levels of local residents.

### 5.2 Integration and Development of Tourism Resources:

Local tourism resources, including nature, culture, and history, can be fully explored and combined with the renovated residential houses to create unique tourism products. For instance, theme-based tourism routes highlighting folk culture can be developed to provide special experiential activities and attract tourists to participate.

### 5.3 Community Participation and Multi-party Cooperation:

Local residents are encouraged to actively participate in the operation and management of the renovated residential houses, enabling them to share their traditional culture and generate income. Collaboration with multiple stakeholders, such as government and enterprises, can also facilitate the successful implementation of the rural residential renovation project.

### 5.4 Marketing and Promotion:

Effective marketing strategies should be developed to promote the renovated rural residential houses and increase their visibility through social media, tourism platforms, and other channels. Collaboration with local travel agencies and scenic spots can help attract more tourists to experience these unique accommodations.

### 5.5 Training and Promotion:

Training programs should be implemented to improve the service levels and professionalism of local residents, enabling them to provide quality services to tourists. Continuous experience sharing and improvements in the rural residential renovation project should be emphasized to enhance its sustainability.

#### 5.6 Supervision and Evaluation:

Establishing a robust supervision mechanism is crucial to ensure standardized and orderly operation and management of the renovated rural residential houses. Regular evaluations should be conducted to identify and address any issues, leading to continuous improvement and the sustainable development of the rural residential renovation project.

In conclusion, the operation and management of rural residential buildings in Inner Mongolia after experiential transformation require comprehensive consideration from various perspectives. By establishing an effective operation mode and harnessing their full potential, these dwellings can contribute to rural revitalization and the development of the tourism industry.

## **Part VI: Summary and Prospect**

### 6.1 Research Summary:

This study explores the experiential renovation design of rural residential buildings in the Inner Mongolia region through literature research, field studies, and case studies. It proposes design principles that focus on protecting traditional cultural characteristics, environmental sustainability, residential comfort and practicality, integration of modern technology and intelligent features, promotion of regional interaction and communication, and enhancement of tourism experiences. Additionally, the study presents targeted renovation design solutions and practices based on specific cases, offering valuable references and inspiration for the experiential renovation of rural residential buildings in Inner Mongolia.

### 6.2 Research Shortcomings and Prospects:

#### 6.2.1 Shortcomings of the Study:

This study offers a preliminary exploration of experiential renovation design for rural residential buildings in Inner Mongolia; however, it does have several limitations. Firstly, the geographical scope is limited to Inner Mongolia, potentially neglecting regional characteristics, ethnic customs, and architectural aspects of rural residential buildings in other areas. Secondly, the case study analysis is restricted, with only two examples provided, suggesting that additional representative cases would bolster the research's conclusions. Thirdly, there is a lack of interdisciplinary research as the study primarily focuses on architectural design without comprehensive engagement with other disciplines, such as tourism and culture, relevant to rural residential building transformations. Finally, the study's reliance on literature research and fieldwork results in insufficient empirical data to fully support its conclusions, potentially limiting the validity of certain findings.

#### 6.2.2 Future Research Directions

As the implementation of the rural revitalization strategy progresses, the experiential renovation design of rural residential buildings holds significant importance in preserving traditional culture and promoting rural tourism development. Future research can focus on the following areas:

In-depth exploration of the diversity of rural dwellings in Inner Mongolia, studying additional transformation design solutions that exhibit regional and ethnic characteristics, thereby enriching the research content and outcomes.

Investigation of the interaction and integration between experiential renovation design of rural residential buildings and rural planning, rural tourism, rural culture, and other fields, aiming to establish a more comprehensive rural revitalization system.

Strengthening practical exploration of experiential transformation design for rural residential architecture, consolidating successful experiences, and continuously optimizing and improving design methods and strategies.

Emphasis on the sustainability of experiential renovation design, with research focused on environmental protection and energy-saving design techniques and methods, thereby providing support for the green development of rural residential buildings.

In-depth research into the operation and management mechanisms of experiential renovation design for rural residential buildings, ensuring that renovated residential buildings can continue to add value and contribute to rural revitalization and the tourism industry's development.

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