

Identification of rural vernacular building character and conservation strategy from the perspective of rural tourism -- a case study of Yayou Gou Village in Shandong Province, China

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Abstract. Rural vernacular building is a traditional dwelling house with the characteristics of the time and regions, which is now greatly impacted by urbanization and modernization. This research takes the rural vernacular building of Yayou Gou Village as the study case and uses document analysis, observation, and interview method to investigate the character and conservation strategies of rural building. The paper suggests that the building site characters are greatly influenced by topography and living conditions, followed by village traffic. The architectural forms represent the rural style of southern Shandong province with the unique roof shale covered. The layout of the building helps to maintain kinship and improve the local microclimate. Under the background of rural tourism development, effective protection methods for traditional buildings include function revitalization, museum transformation, homestay transformation, and local residents' living are identified. Through the analysis of rural characteristics and conservation methods exploration, it is beneficial to further research on the character of rural architectural elements, promote the utilization and protection of rural building landscape, and provide enlightenment for rural development.

1 Introduction

The rural vernacular building is an important type of rural landscape and a product of the time. They were constructed by local residents in the traditional way, adapting the continuous process of change of rural environment[1]. However, with the urbanization of rural living environments and the homogenization of rural construction, the abandonment and decline of rural vernacular buildings have become inevitable[2], which appears more necessary and significant for its protection as well as for rural tourism activities.

Rural tourism has gradually become an important mode of rural development, which plays an obvious positive role in the utilization and conservation of rural resources. Rural vernacular buildings contain long-standing expressions of residents' characteristics of rural areas and become important attractions for tourists[3,4]. In the process of rural tourism development, the protection and utilization of rural vernacular buildings have also been discussed by many scholars[4-6]. This paper aims to explore the traditional character and the conservation strategies of vernacular traditional buildings from the perspective of rural tourism by taking the Yayou Gou Village as the study case, to bring enlightenment to the protection of rural landscape and the development of rural

tourism.

2 Methodology

In this research, an integrated approach included document analysis, observation, interview, and case study, has been used. The observation was carried out in the case of Yayou Gou Village which exists in ample traditional vernacular buildings. Interviews were conducted before document collection and analysis.

2.1 Study case

Yayou Gou Village is located in Lanling County, Linyi City, Shandong Province, China (see Figure 1). It is in the north of China. The climate here is a temperate monsoon climate. It is now developed into a tourism area base on the old village resource of Yayou Gou, which covers an area of about 333 ha. Vernacular buildings include sorts of manmade structures, for example, private homes, public buildings, religious structures, and so on[7]. Here, the study focuses on the private and traditional ones, which exist for a long time. The vernacular traditional buildings in Yayou Gou Village are of a great significant character. They are important attractions for tourists, symbolizing the rural building style of South Shandong Province. Due

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to the successful transformation from a poor traditional village to a rural tourism destination, the vernacular buildings have played an essential role in the rural landscape for a tourism experience. Therefore, a better understanding of its vernacular landscape is becoming a task for researchers.



Figure 1 The location of Yayou Gou Village

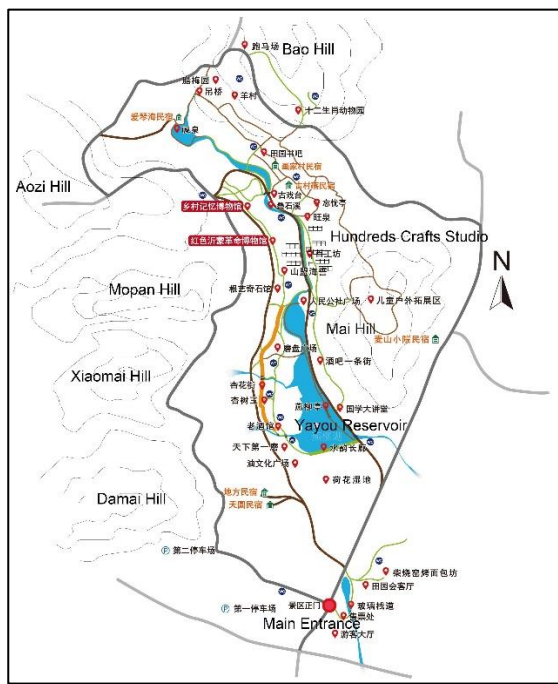


Figure 2 The general building site selection and terrain of Yayou Gou Village

2.2 Research method

There are two phases of this research includes desk study and field survey. The document analysis is used in desk study to collect and analyze the relevant documents about Yayou Gou Village. These documents relate to the historical development, map, development plan, and so on about this area. Observation and interview used for data collection in field survey to investigate rural building features and conservation. 15 semi-structured interviews were conducted with 8 knowledgeable villagers, 5 managements, and 2 researchers. The field survey period is between 10, November and 5 December 2020.

3 Results & Discussion

3.1 The character of vernacular building in Yayou Gou Village

3.1.1 The site selection character

(a)From the perspective of topography

Most vernacular buildings of Yayou Gou Village are located in the valley area of the hills on the east and west side. As shown in Figure 2, building site selection and terrain elements have an obvious influence on Yayou Gou Village. The elevation of the village is high in the north and low in the south, surrounded by three sides of hills on the north, east, west side. The hills on the west side including Damai hill, Xiaomai hill, Mopan hill, Aozhi hill, and the north side is Bao hill and Yin hill. Mai hill is in the east of the village. The south of the village is the main entrance. The highest peak of hills' elevation range from 130 to 198 meter and the highest peak is 198 meter in Bao hill. Though the traditional buildings of the village are mainly located in the valley, there is a certain distance from the valley floor, which can prevent the disaster of mountain torrents caused by heavy rainfall. The upward space of the building is planted with economic forest, on the one hand, this can facilitate the villagers to manage fruit forest, on the other hand, it helps to prevent landslides and mud-rock flows, and other disasters. From the perspective of topography, the site selection of the building has characteristics of flood control, animal protection, resident safety, farm work availability, which reflects the smart wisdom of the villagers of Yayou Gou in building in accordance with the natural environment.

(b)From the perspective of transportation

The main road to the village starts from the southern entrance to the northern hilltop. The first half of the main road can be used for car driving and the last part is only for walking. Vernacular buildings are mainly distributed along both sides of the road. In some areas, buildings are distributed in rows, which forms branches of the road. The buildings mainly face south for getting more sunlight, while some buildings face the road for quick access. On the whole, the village trunk road has a certain influence on the site selection of buildings, but the secondary road has little impact on the construction of buildings. Oppositely, it is the construction of rural buildings that make the secondary road appeared.

(c)From the perspective of living conditions

There is a stream starting from the north hill, then flow through the central valley, into the south reservoir named Yayou reservoir. Due to the terrain conditions, the flat area is very limited, so farmland is poor in Yayou Gou Village. However, hill topography promotes the planting of fruit trees, including chestnut and hawthorn. The water source in the village originates from the higher area in the north and converges along the valley to the reservoir downstream. The buildings are mainly located in the middle of the flow area, which not only can use the clean water from the mountain spring but also exist a certain distance from the downstream reservoir to prevent the impact of the flood (Figure 3). The reservoir can store

spring water from the source and rains, so as to ensure the living function of villagers and the irrigation function of nearby fruit trees, which highlights the great wisdom.

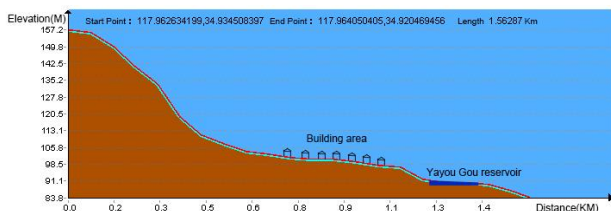


Figure 3 The section view of Yayou Gou Village

3.2 Style features

Most of the existing traditional buildings in Yayou Gou Village were built before the 1940s, which are representative buildings in the south of Shandong Province. There are nearly 70 existing traditional buildings, accounting for more than 50% of the total buildings, so the number is relatively rich. The architectural form is roughly divided into two categories: one is the quadrangle courtyard with the main room and wing room, and the other is the single building without a courtyard. The building materials are mainly local bluestone and shale. On the whole, the buildings in Yayou Gou village are characterized. The roofs are mostly covered by several tiers of local shale, instead of traditional tiles (Figure 4). These shales are widely used because of their dense texture, large area, beautiful natural texture, and low cost. The courtyard is also made of local stones piled up in an orderly manner, continuing the local traditional material characteristics. Some courtyards attached to the buildings are open spaces without physical walls, reflecting the good local folk customs.

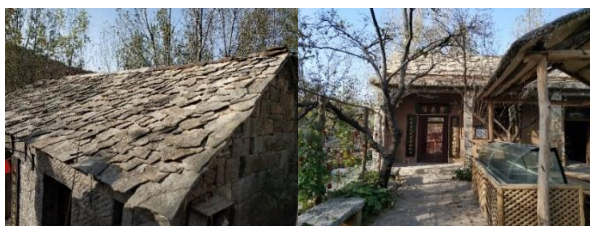


Figure 4 The style of the building and its roof in Yayou Gou Village

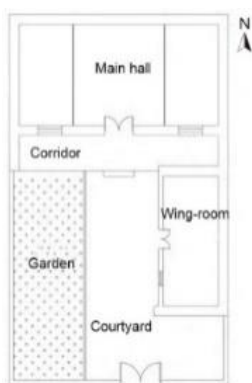


Figure 5 The Layout of building in Yayou Gou village

3.3 Layout character

The courtyard is facing south, narrow in the east and west, and wide in the north and south. It is composed of main halls, wing-room, corridor, courtyard, etc. (Figure 5). The gate is normally on the south side facing the street. The area of a house has something to do with the living population, topography, and family wealth. Shandong province has a temperate monsoon climate, with strong winds in winter. The courtyard facing south is conducive to improving the micro-climate and improving the thermal insulation effect in winter. Under the influence of the concept of family settlement, the courtyard house is conducive to maintaining family relations among blood relatives. The layout of the courtyard also plays a positive role in security.

3.4 Conservation strategy of vernacular buildings in Yayou Gou Village

3.4.1 Function revitalization

Villages as the geographical space of human living style in which buildings are the specific residential units. Humans are not only the builders of villages and buildings but also the driving force of development. Without human cultural creation, villages would lose their charm and characteristics. Without people's production and living activities, the village has no vitality. Uninhabited buildings, however well restored, will decay rapidly. Therefore, if the revitalization of traditional villages only focuses on building and natural space, ignores the role of people, and the absence of villagers, it will be difficult to avoid the "hollowing out" of villages. In the revitalization of traditional villages, if agriculture is neglected and no one is engaged in agricultural production, villages will lose their economic basis. Without economic activities such as tourism, the service industry, the handicraft industry, and commerce, it will be difficult to meet the living needs of villagers. Without cultural restoration, villages will lose sustainable development force. After the development of rural tourism area, Yayou Gou Village deeply excavates the cultural deposits of the village, coupling with the traditional building, and formulate "Hundreds Crafts Studio" as a scenic spot, that is, using the traditional building to restore the traditional production techniques of the village, including winemaking, oil-pressing, traditional food, sachet-making and so on. (See Table 1)

Table 1: the category of vernacular building revitalization in Hundreds Crafts Studio of Yayou Gou Village

Name	Content
Wind studio	Wine, fruit wine and its production process
Pancake studio	Local pancake (Jianbing) and its production process
Tofu studio	Tofu and its production process
Steamed bun studio	steamed bun and its production process
Cooking oil studio	Cooking oil and sesame oil
Pickle studio	Pickle food

Noodle studio	Sorts of noodles
Carpenter studio	Wooden product and its production process
Spice studio	Sorts of spice production
Bamboo-weaving studio	Weaving product about bamboo and its production process

Through the reproduction of traditional crafts and delicacies, the rural building is revived and rural culture is inherited, which increases tourists' interest in visiting experience and becomes the most impressive scenic spot in the tourism area.

3.4.2 Museum transformation

After a long period of wind, the countryside is itself a museum of abundant resources. The thematic display of rural areas can form numerous thematic museums. These museums are small, refined, and distinct from urban museums. There are Red Yimeng Revolution Museum, Rural memory Museum, Blue cloth museum, Root art Museum, and so on(see Figure 6).



Figure 6 The types of the rural museum in Yayou Gou Village

3.4.3 Homestay transformation

In recent years, the homestay has become the best form for tourists to get close to the countryside, and stay there, restoring the residential function of traditional buildings in rural areas. Different forms of homestays allow visitors to experience them personally and get the most authentic experience of the beautiful countryside. Therefore, traditional buildings can be used continuously without being abandoned. The traditional buildings in Yayou Gou Village are transformed to meet the needs of tourists while keeping the traditional features to the greatest extent, so the homestay in Yayou Gou Village is widely praised by tourists.

3.4.4 living with local resident

The basic function of the building is to live in rural areas. Living with the indigenous people has also become a way of protection, while some rural tourism may clear out local residents and use their house for a specific purpose relating to tourism activities. Although Yayou Gou Village has been developed into a tourism area, some local residents still live in the traditional buildings. In this way, the buildings will be continuously renovated and kept alive for a long time. However, the interior of the building needs to be modernized to meet the needs of the residents'

modern life.

4 Conclusion

Rural vernacular buildings normally present as an important landscape in rural areas. Under the background of urbanization and rural tourism development, the conservation of rural buildings is more significant. This paper takes the traditional building of Yayou Gou Village in Shandong province as a study case and analyzes the characteristics and conservation strategies of its vernacular building. It was found that the building sites are greatly influenced by topography and living conditions, followed by village traffic. The architectural form is mainly a quadrangle courtyard, with unique roof shale covered. The layout of the building helps to maintain kinship and improve the local microclimate, especially in winter. After the village developed into a rural tourism area, effective conservation methods for traditional buildings include function revitalization, museum transformation, homestay transformation, and local residents' living are identified. Through the analysis of rural characteristics and protection methods, it is beneficial to further explore the characteristics of rural architectural elements, promote the shaping and protection of rural architectural landscape, and provide enlightenment for rural development.

However, there are also some limitations in this study. Due to the limitation of study time, the amount of village data, for example, the relevant document, needs to be further enriched. The interview number is limited, and the investigation on the village development history is not in-depth enough. Further relevant information and interview of residents are needed to improve the credibility of the research.

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References

1. Philokyprou, M., Michael, A., Malaktou, E., & Savvides, A. (2017). Environmentally responsive design in Eastern Mediterranean. The case of vernacular architecture in the coastal, lowland and mountainous regions of Cyprus. *Building and Environment*, *111*, 91–109.
2. Agnoletti, M. (2014). Rural landscape, nature conservation and culture: Some notes on research trends and management approaches from a (southern) European perspective. *Landscape and Urban Planning*, *126*(2014), 66–73.
3. Aytuğ, H. K., & Mikaeili, M. (2017). Evaluation of Hopa's Rural Tourism Potential in the Context of European Union Tourism Policy. *Procedia Environmental Sciences*, *37*, 234–245.

4. Fu, J., Zhou, J., & Deng, Y. (2020). Heritage values of ancient vernacular residences in traditional villages in Western Hunan, China: Spatial patterns and influencing factors. *Building and Environment, August*, 107473.
5. Oliver, T., & Jenkins, T. (2003). Sustaining rural landscapes: The role of integrated tourism. *Landscape Research, 28*(3), 293–307.
6. Alcindor, M., & Coq-Huelva, D. (2020). Refurbishment, vernacular architecture and invented traditions: the case of the Empordanet (Catalonia). *International Journal of Heritage Studies, 26*(7), 684–699.
7. Nguyen, A. T., Truong, N. S. H., Rockwood, D., & Tran Le, A. D. (2019). Studies on sustainable features of vernacular architecture in different regions across the world: A comprehensive synthesis and evaluation. *Frontiers of Architectural Research, 8*(4), 535–548.