

# Research on the Protection Strategies of Traditional Villages from the Perspective of Architectural Typology: Taking Nuogang Village and Wengji Village in the Jingmai Mountain as Examples

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**Abstract** There are many traditional villages with well-preserved architectural types and images in the Jingmai Mountain, Yunnan Province. Through field investigations in traditional villages in the research area, this study applied the architectural typology, analyzed Nuogang Village of the Dai Nationality and Wengji Village of the Bulang Nationality from 3 perspectives of “point, line and surface”, explored the characteristics of village, architecture and landscape, and extracted the “prototypes”, tried to figure out the problems of the villages and then propose corresponding protection strategies, so as to support the preservation, renovation, improvement and utilization of traditional villages.

**Keywords** Traditional village, Architectural typology, Jingmai Mountain, Prototype, Protection and development

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With the acceleration of urbanization and further development of tourism industry in China, traditional villages have been threatened by multiple crises such as alienation of material spaces, degradation of cultural memories, and imbalance of ecosystem. According to statistics, quantity of traditional villages in China has experienced a drastic decline in the past 2 decades, some of them have been losing their historic images and cultural value for the lack of appropriate and effective protection strategies. In this context, the core and emergent task for the protection of traditional villages is to balance modern development and cultural inheritance.

Traditional village is a carrier of regional cultures, historic memories and national wisdom. Nuogang Village and Wengji Village are typical representations of traditional ethnic villages, where the unique stilt-type architecture of the Bulang Nationality and the Dai Nationality has been well preserved. However, both villages have been faced with challenges in control of architectural style, cultural inheritance and conservation of ecological environment, due to the rapid growth of tourism industry and human activities. This study used the architectural typology to extract the architectural prototype of Nuogang Village and Wengji Village from the historic context and regional environment, proposed the strategies balancing protection and development on the basis of solving existing problems, so as to provide theoretical references for the preservation of traditional villages in China.

## 1 Ancient tea plantation cultural landscapes in the Jingmai Mountain

### 1.1 Application for the list of world heritage

Ancient tea plantation cultural landscape in the Jingmai Mountain is located in Huimin Town, Lancang Lahu Autonomous County, Pu'er City, Yunnan Province. As a typical artificially cultivated ancient tea plantation, it has been well preserved and developed rich connotations, consisting of 5 ancient tea plantations, 9 ancient villages and 3 partition protective woods. Since 2010, the application for the list of world heritage had been launched, and on September 17, 2023, the 45<sup>th</sup> Session of World Heritage Conference approved the application, ancient tea plantation cultural landscapes in the Jingmai Mountain was included in the *List of World Heritage* as the 57<sup>th</sup> world heritage in China. Traditional villages in the heritage area has been well preserved during the application, a series of protection countermeasures have been applied in the local traditional villages. In 2013, Nuogang Village, Wengji Village and Mangjing Village were included in the second batch of “List of Traditional Chinese Villages”. In 2015, the protective utilization of Wengji Village and Nuogang Village was launched. In 2018, National Cultural Heritage Administration of China started the assessment of the first batch of traditional villages under the national and provincial level of protective utilization, and assured the efforts in protective utilization of traditional villages in the Jingshan Mountain<sup>[1]</sup>.

### 1.2 Status quo of traditional villages in the Jingmai Mountain

The Jingmai Mountain is situated in the south of Lancang County, southwest border of China, the heritage area consists of 9 villages with heritage factors, of which 5 are those of the Bulang Nationality in the south, i.e. Mangjing Upper Village, Mangjing Lower Village, Manghong, Wengji and Wengwa, 4 are traditional villages of the Dai Nationality in the north, i.e. Jingmai Village, Mengben, Manggeng and Nuogang. There are nearly 5,000 people of 1,200 households in the 9 villages, 530 traditional folk dwellings, 321 historic and cultural buildings under the national key protection<sup>[2]</sup>. Nuogang Village is the Dai Village with the best-preserved traditional village images, and Wengji Village is the most representative village of the Bulang people, thus these 2 most representative villages were chosen for the further research (Fig 1–2).

## 2 Theoretical background

### 2.1 Architectural typology

Architectural typology can be simply defined as a theory of studying architectural types, including the occurrence, development, properties and characteristics of the types<sup>[3]</sup>. Architectural typology originated from France in the 18<sup>th</sup> century, Abbe Laugier, Ribard de Chamouss and Jacques Francois Blondel first discussed the origination, prototype and typology thinking; in the early 19<sup>th</sup> century, Quatremere de Quincy and Jean-Nicolas-Louis Durand developed the architectural typology completely and made it an architectural theory and design

method. First, Quatremere de Quincy established the definition of type, and then clarified the definition of type by distinguishing type and model, and for the first time clearly defined “architectural typology”, and since then, the theory of “architectural typology” was primarily formulated. In China, research on architectural typology started late, Professor Wang Lijun from Tianjin University<sup>[4]</sup>, as a senior scholar in the field of architectural typology, comprehensively and systematically elaborated the theoretical framework, historical line of architectural typology and its application in modern architectural design in *Architectural Typology*. In recent years, research on architectural typology has been expanded from theoretical research to multi-directional theoretical application along with the accelerating urbanization in China.

## 2.2 Application of architectural typology in traditional villages

Architectural typology is applied in traditional villages to realize the balance between protection and revitalization through morphological classification, mechanism analysis and symbol translation. Through summarizing the common characteristics of architectural forms, it disclosed the cultural logic and spatial rules under them, provided theoretical support for the protection, renovation and sustainable development of traditional villages. Introducing architectural typology into traditional village research helped to better explore the inner architectural and spatial hardware rules of the villages, as well as the cultural connotations and cultural value behind, so as to provide more precise suggestions for the protection of traditional villages.

## 3 Extraction of prototypes from Nuogang Village and Wengji Village

### 3.1 Planar layout of the villages

**3.1.1 Point features:** building around the village center. Village center or village heart is the center and starting point of village construction, also known as “god of village center” or “god of the land”, it is also the soul of village and symbol of village culture and belief<sup>[5]</sup>. For the god worship, buildings and streets in both villages center around the village heart in the centripetal layout. From the inside out, the village layout shows the spatial layout characteristics of their belief system, i.e. village heart—centripetal buildings, street—Buddhist temples and building—ancient tea plantations, forest (Fig.3).

**3.1.2 Point features:** Buddhist temples sustain

values of the indigenous ethnic groups. The Dai people and the Bulang people in the Jingmai Mountain believe in Buddhism, and believe that Buddhist pagoda is the spirit space in the composition of a settlement, and the belief has essential impact on the spatial layout of village. Buddhist temple in Nuogang Village is situated on the high platform in northwest of the village, showing the construction and decoration features of the Qing Dynasty. The pagoda in Wengji Village is located in the north, the commanding height of the whole village. Temples are places for villagers holding Buddhist ceremonies and festival activities, and they sustain the values of indigenous ethnic groups (Fig.4).

**3.1.3 Line features:** village road layouts. Roads in Nuogang Village roughly show the “single-line” curve distribution, consist of the transverse main road and several vertical lanes, the arteries connect with the lanes and forms grids, the main artery stays parallel with the contour line. Wengji Village has a vertically “tree-shaped” dispersing layout, consists of a vertical main road and several branches on both sides, the main road connects south and north of the village and stays vertical to the contour line, the branches lead to villagers’ houses.

**3.1.4 Surface features:** planar distribution relationship among villages, tea plantations and forests. Ethnic groups in the Jingmai Mountain have used the limited land resources reasonably, lands for production, living and ecological use have been well designed. In this area, each village is surrounded by different tea plantations, because since their ancestors settled here, they planted tea trees around the village, and cultivated the limited land in nearby forests. Such a unique planar utilization model has formed the special layout of “forest—tea plantation—village” in which tea plantations have been cultivated in forests, tea plantations formed around villages, in this way, forests have been used reasonably, tea plantations well protected, villages developed properly.

### 3.2 Single buildings

**3.2.1 Point features:** traditional folk dwellings. Folk dwellings of both Dai and Bulang people use traditional stilt type, which adapts well to local humid climate, satisfies needs of daily life, and also facilitates the tea drying, storage and processing. A stilt-type building is generally a two-storey building with slope roof. The first floor is for storing, and raising animals, and now mostly used as the tea or storage room; the second floor is for living, and the platform is the activity space and tea drying and processing area.

Woods and bamboos are mostly-used building materials, the hip-and-gable roof is covered with square hanging tiles.

**3.2.2 Point features:** Ridge decorations for folk dwellings. Ridge decorations symbolize the villagers’ worship for animals and tea. Stilt-type folk dwellings in Nuogang Village and Wengji Villages have wide but not dull roofs. Influenced by its tea culture, folk dwellings of the Bulang people have decorations like “two tea laves” on the ridge, and these two leaves and the center sprout tip together become a symbol of the nationality, i.e. “one sprout and two leaves” based on their large-leaf tea, represented by those in Wengji Village (Fig.5). Ox horns are often used as decorations on the ridge of Dai people’s dwellings, forming the ethnic symbol of “Ox”<sup>[6]</sup>, represented by those in Nuogang Village (Fig.6).

**3.2.3 Surface features.** Architectural planar design. Dwellings of the Dai people mostly have square planar layouts and multiple eaves, in their stilt-type buildings, wardrobes or partition boards are often used to separate the bedrooms from other spaces. For each house in Nuogang Village, there is a tea drying platform connecting with or independent from the living building (Fig.7). Dwellings of the Bulang people mostly have square or “L-shaped” layouts, and single-eave roofs. They have no independent bedrooms, the balcony reaching out on the second floor is an essential activity space for the Bulang people, and on this platform, villagers in Wengji Village dry their clothes and tea, or sit there and relax (Fig.8).

## 3.3 Traditional village landscapes

**3.3.1 Point features:** public space landscapes in the village. Public space landscapes in the village indicate the public spaces and related landscape designs open to villagers and tourists in rural areas. These spaces carry multiple functions such as daily life, communication and leisure of villagers. In Nuogang Village, such spaces include the village center, Buddhist temple, Golden Pagoda, viewing platform, ancient trees, green spaces, shelter bridge, and square (Fig.9). In Wengji Village, there are the village center, village gate, Buddhist temple, ecological square, small square, ancient cypress etc. (Fig.10).

**3.3.2 Line features:** village street space landscapes. Village street space landscapes refer to the landscape forms of rural public spaces such as streets and lanes, as well as their environmental layouts. As the “skeleton” of village life, these spaces carry multiple functions such as traffic, communication, activity, and cultural inheritance. In Nuogang Village, main roads are different from lanes in width, which subjectively tells the

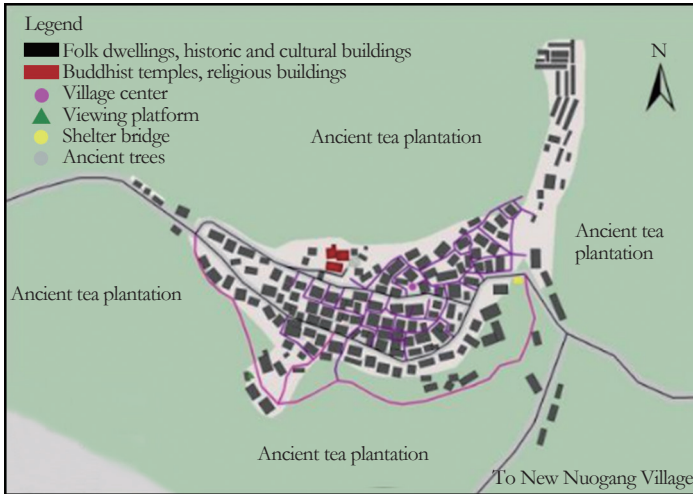


Fig.1 Master plan of Nuogang Village

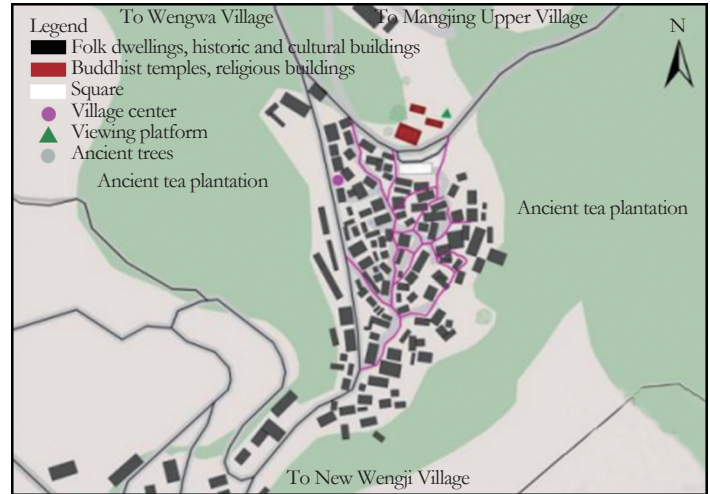
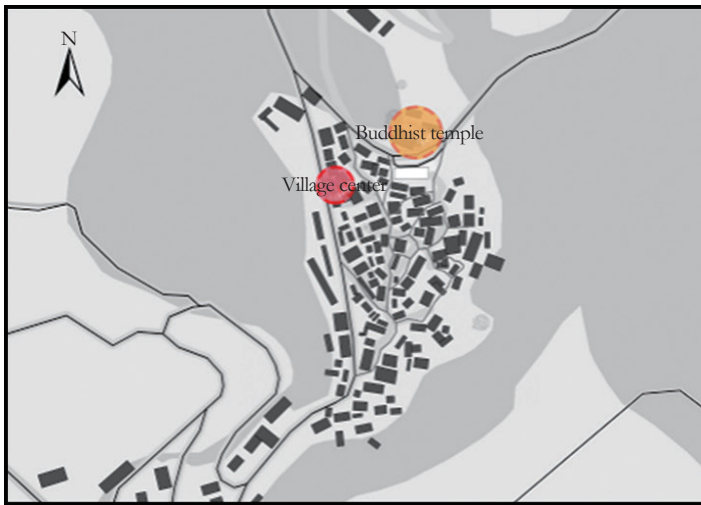


Fig.2 Master plan of Wengji Village



Nuogang Village



Wengji Village

Fig.3 Extraction of point features in the village



Nuogang Village

Wengji Village

Fig.4 Extraction of point features in the villages



Fig.5 "One sprout and two leaves" ridge decoration

differentiation between primary and secondary. In Wengji Village, roads zigzag on slopes without significant difference in width, and folk dwellings are distributed along both sides.

**3.3.3 Surface features: village community layout.** Both Nuogang Village and Wengji Village have preserved traditional layouts and historic features of villages in the Jingmai Mountain, all folk dwellings and other buildings are distributed around the village center, showing the centripetal layout. Continuous mountains, dense forests, and ancient tea plantations constitute the natural environment, which together with folk dwellings co-form the unique "figure-ground" relationship, showing a relatively open spatial layout from the whole to the part. There are 79 traditional folk dwellings in Nuogang Village listed as the cultural buildings, 49 in Wengji Village, distribution of these buildings manifests the adaptation to local terrains (Fig.11–12).



## 4 Problems of the ancient tea plantations after world heritage application

### 4.1 Tourism development ruins ecological environment

Ancient tea plantations in the Jingmai Mountain has considerable ecological value as the world heritage. However, ecological environment of the villages have been faced with severe threats for the increasing tourists and development activities. After being listed in the world heritage, the ancient tea plantations have attracted a great number of domestic and foreign visitors, and tourism activities have brought burdens to local ecological environment. Marvelous tourist flow and irregular tourist activities such as littering, trampling on plants have threatened ecological balance of the tea plantations, ecological recovery have been seriously influenced.

### 4.2 Industrial development influences architectural styles

With the development of tourism industry, some traditional villages have been rebuilt into scenic areas, which have brought economic benefits, but to some extent have damaged the original architectural styles. For the lack of professional knowledge and consciousness of protecting cultural relics, villagers often build their houses randomly, leading to the inconsistency with original architectural styles. Moreover, the young generation go to cities for working or living, number of permanent residents in the traditional villages declines gradually, many folk dwellings are abandoned and left idle. And more folk dwellings are rebuilt into some hotels, traditional buildings are gradually replaced by modern architectural style.

### 4.3 Tourism development threatens cultural inheritance

Along with the successful application for world heritage, tourism industry has become a pillar of local economy. Meanwhile, the conflicts between tourism development and cultural inheritance have emerged. Rapid development of tourism industry has attracted tremendous commercial investment and construction, the scenic areas have been overdeveloped and shown commercialization of facilities. Shops, hotels and other tourist facilities have improved the accommodation capacity of the villages, but have exerted negative impacts on traditional architectural styles and cultural landscapes, and even threatened inheritance and development of traditional village cultures.



Fig.6 “Ox” ridge decoration



Fig.7 Traditional folk dwellings of the Dai people in Nuogang Village



Fig.8 Traditional folk dwellings of the Bulang people in Wengji Village



Pagoda



Buddhist temple



Shelter bridge

Fig.9 Point features of public spaces in Nuogang Village



Village center



Buddhist temple



Square

Fig.10 Point features of public spaces in Wengji Village



Fig.11 Planar layout of Nuogang Village



Fig.12 Planar layout of Wengji Village

(To be continued in P80)

a crucial role in enhancing visitor experiences. Evaluation score distributions indicate generally positive feedback for ecological and cultural amenities, while industrial amenities show room for improvement, with negative evaluations highlighting specific areas needing attention in rural tourism development.

(3) Pearson correlation tests demonstrate significant differences in how different amenity indicators affect tourist experiences. Multiple indicators of ecological amenities show strong positive correlations with tourists' mood, satisfaction, and revisit intention, confirming their central role in enhancing experiences. Cultural amenities significantly improve mood and satisfaction but show no significant impact on revisit rates.

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## 5 Protection and development strategies for traditional villages

### 5.1 Maintaining prototype elements of the villages

With the social development and increasing population, new villages have been built nearby the old Nuogang Village and Wengji Village, the prototype elements in the old villages must be maintained properly. During the protection, regional cultural characteristics carried by the buildings must be respected, traditional functions and forms preserved, architectural types extracted in this study also protected and inherited reasonably. Proper design strategies can be adopted to realize the modern translation and innovative application of traditional architectural types, to cater for modern living needs, and inherit regional cultural context.

### 5.2 Protecting ecological environment

Traditional village is an organic whole, of which the village characteristics, architectural features and landscape characteristics co-present the features of village type. In the conservation of traditional villages, the coordination between buildings and neighboring environment must be stressed, the strategies of rural revitalization must be implemented, original ecological,

landscape and cultural background of the villages maintained and restored. The conservation must stress the ecological conservation measures, establish tourist flow management mechanism, reduce the negative impact of human activities on environment, and realize the ecological revitalization.

### 5.3 Coordinating development and protection

Protection of traditional buildings in the Jingmai Mountain must following the principle of coordinating development and protection. First, traditional static protection model should be broken, "living inheritance and development" and villagers as the main force must be highlighted, and villagers' benefits in the protection and development of traditional villages must be guaranteed, their consciousness of cultural inheritance must be enhanced, to transit from passive protection to active protection. Second, the goal of sustainable development must be followed, tourism and commercial projects can be developed properly, excessive commercialization must be avoided to protect original architectural styles and natural landscapes, so as to realize the balanced improvement of both tourism development and village prototype protection, and achieve the

"development in protection, and inheritance in development" of traditional villages.

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