

The Intervention of Design in the Beautiful Countryside Construction in Yunnan Province

Taking Wengding Village, Cangyuan Wa Autonomous County as an Example*

Weibing Li Design School Yunnan Arts University Kunming, China 650500

Abstract—From the construction of new socialist countryside to the construction of beautiful countryside and to the revitalization of countryside, design has been more and more intervened in the construction of countryside, and it even promoted the development of countryside from a certain aspect. But, how does design intervene in rural construction? Firstly, this paper studies the dynamics of rural construction in China and abroad. Then, taking the Wengding Village in Yunnan Province as an example, it analyzes from two aspects of the design concept of design for villagers and the regeneration of the core value of traditional folk houses, and summarizes the construction mode of multi-participation new rural community which is oriented to the analysis of rural problems.

Keywords—design intervention; beautiful countryside; Wengding Village

I. INTRODUCTION

In 2013, China proposed for the first time to "Strengthening rural ecological construction, environmental protection and comprehensive renovation, and striving to build beautiful villages." Immediately, there rose a nationwide upsurge of "beautiful countryside" construction. In 2018, the country put forward the strategy of "rural revitalization". When it comes to the decisive year of poverty alleviation in 2019, against such a background, design not only involves the scope and depth of rural areas, but also promotes the construction of rural areas.

II. RESEARCH TRENDS OF RURAL CONSTRUCTION ABROAD

As early as the 19th century, the idea of rural communes put forward by the Utopian socialism in Europe, and the "Movement of the Third Kind of Intellectual" in Russia all affected the rural development at that time to varying Rui Wang Design School Yunnan Arts University Kunming, China 650500

degrees¹. In the mid-20th century, the department of anthropology of Cornell University conducted the "free community" experiment in the rural area of Vicos, which was the most representative rural construction experiment in the early United States: anthropologists join and intervene in the rural area with a positive attitude.² Since 1955, Japan has carried out many new rural construction campaigns. In the late 1970s, Japan took the lead in launching the "villagebuilding movement" to comprehensively utilize and develop rural resources, so that various projects could be integrated and developed efficiently. However, the "One Village, One Product" movement implemented in 1979 is a very representative exploration in rural construction. It is designed to intervene in the countryside, fully develop the advantageous resources of the countryside, nurture the city, and make the countryside rejuvenated. After the 1990s, Japanese artists began to participate consciously and unconsciously in the reconstruction of the countryside. Among them, the Naoshima model adopted in the reconstruction of the four islands in the Seto Islands by use of contemporary art design is the most representative. ³In 1970, Park Chung-Hee's government initiated the "New Village Movement" to promote balanced development of industry and agriculture. In addition, in the 1990s, Germany's "Village Renewal" focused on rural values, emphasizing the concept of sustainable development, harmonious development with nature and sustainable economic development in line with local conditions.

Foreign design intervention in new rural construction focuses on the protection of the original rural appearance, and the intervention of design is for the rural construction of sustainability. This model provides the experience of sustainable development for the construction of new countryside in China.

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¹ See Yin Aiyang, Wang Baosheng. A Comparison Study on Artdriven Rural Construction Cases [D]. Changsha: Master's Thesis of Hunan University, 2017. 5, P10.

² Ditto.

³ See Fang Lili. Research on the Anthropological Perspective of Art Intervention in the Construction of Beautiful Countryside [J]. Ethnic Arts Quarterly, 2018(1), P23.

III. RESEARCH TRENDS OF RURAL CONSTRUCTION IN CHINA

At the end of the 19th century, faced with the impact of western industrial civilization, the entire economic, cultural and social decline led to the bankruptcy of rural China. In 1902, the "Zhaicheng Village Annals" of the father and son from the Mi family in Dingxian County, Hebei province was the prologue to China's rural practice (see "Fig. 1"). They introduced the Japanese agricultural association system to the local area and established a model village in Zhaicheng and promoted the system there.⁴ The "Zhaicheng Village Annals" is the first to introduce foreign experience into China. Later, Fei Xiaotong, a famous scholar, put forward from the perspective of rural society that rural industrialization should be promoted to develop the countryside and industry should be kept in the countryside to develop the countryside. He also explored the "Southern Jiangsu pattern", "Wenzhou pattern", "civil rights pattern" and other development patterns such as "aims at enriching the people". ⁵In the 1920s and 1930s, scholars such as Liang Shuming, Yan Yangchu and Yang Kaidao who were "agrarians" advocated the rural construction, pointing out that rural culture is the foundation of Chinese culture. Among them were "Dingxian County Model" proposing to cultivate "educated new Chinese peasants" put forward by Yan Yangchu and the "Zouping model" put forward by Liang Shuming to rebuild the new social order in China. ⁶After 1949, people's communes were set up to stabilize farmers in the countryside with rural registered permanent residence. During this period of time, the countryside did not decline nor get out of poverty. After the reform and opening up, farmers began to go into cities on a large scale. In the new century, the empty-nest phenomenon in rural areas has become more prominent. In October 2005, China put forward a new socialist rural construction program. In 2013, the whole country put forward the construction of beautiful countryside. In 2018, the country put forward the strategy of rural revitalization and targeted poverty alleviation, and put forward the general requirements of rural revitalization including "thriving industry, livable ecology, civilized local culture, effective governance and rich life".



Fig. 1. The Evolution of rural construction in China since modern times.

^{a.} Picture source: the author drew on the basis of "Zhao Chen, Li Changping, Wang Lei. Rural Needs and Architects' Attitudes [J]. Architectural Journal, 2016 (8), P47."

IV. CURRENT SITUATION OF RURAL CONSTRUCTION IN YUNNAN

On December 10, 2018, the Ministry of Housing and Urban-Rural Development released the "Notice on the Fifth Batch of Villages to Be Included in the List of Traditional Chinese Villages on Its Website". So far, 6,799 villages with important protection value have been included in the list of traditional Chinese villages, of which 709 are in Yunnan Province, accounting for 1/10 of the total in China. In the past six years, the Yunnan Provincial Government has invested nearly 20 billion yuan through various channels to build 8,263 beautiful villages with "rural beauty, thriving industry, rich farmers and sustainable development" in the whole province. This fully explains the richness of Yunnan ethnic culture and the value of the protection of Yunnan traditional villages, as well as the broad prospect of Yunnan rural development. Yunnan has been a big agricultural province since ancient times, with a large number of people still staying in the countryside to guard the cultural heritage. However, with the blind influx of commercial and design institutions into the countryside, the phenomenon of appearance homogeneity in villages has done great harm to the rural cultural heritages. The construction of the new countryside gradually deviated from its direction.

Throughout the development of the new countryside in China, design has little involvement in the construction of the new countryside. The boom of design intervention in the rural construction hasn't appeared until the 21st century.

⁴ See Zhao Chen, Li Changping, Wang Lei. Rural Needs and Architects' Attitudes [J]. Architectural Journal, 2016 (8).

⁵ See Yin Aiyang, Wang Baosheng. A Comparason Study on Artdriven Rural Construction Cases [D]. Changsha: Master's Thesis of Hunan University, 2017. 5, P1.

⁶ Ditto.



Especially in the past 10 years, the "countryside construction with art" and "design going to the countryside" have promoted the development of the countryside. Some representative projects have been carried out, such as the XIHAN Action, the construction of Roundness Art Community, the "Xucun Village Plan" of Quyan, as well as the designs made by some design institutions and universities for the countryside. Design and countryside, which has no strong correlation originally, are increasingly connected with the development of society and growth of economy. In the macro context of beautiful villages and targeted poverty alleviation of the country, design is intervened in rural construction, reflecting both legitimacy and necessity. However, legitimacy and necessity do not necessarily lead to good results. In the midst of the heat, a key question worth careful consideration is: what kind of attitude should the design take to intervene in the rural construction?

V. DESIGN INTERVENTION IN WENGDING VILLAGE

Since 2006, Design School Yunnan Arts University has been taking root in one city (or countryside) every year where it carried out Creative activities themed with ethnic culture, including the 2006 "Enriching the People with Creation", 2007 "Creative Shangri-La, Asan", 2008 "Creative Stone Forest", 2009 "Creative Heqing", 2010 "Creative Ruili", 2011 "Creative Gejiu", 2012 "Creative Xundian", 2013 "Beautiful Yunnan", 2014 "CIF University-Enterprise Cooperation", 2015 "CIF University-Enterprise Cooperation", 2016 "Creative Kunming", 2017 "Creative Cangyuan", 2018 "Creative Chenggong", and 2019 "Creative Maitreya" ethnic culture theme of creative activities. For 14 consecutive years, the creative activities are rooted in the urban and rural areas, and the design is intervened in the urban and rural areas, highlighting the regional culture and national culture characteristics, and boosting the development of the urban and rural areas.

Located in Cangyuan County, Lincang City, Yunnan Province, Wengding Village is located in the southwest Yunnan Border between China and Myanmar (see "Fig. 2"). As the last primitive Wa village in China, it has unique and distinct ethnic characteristics and culture, and is a museum of Wa culture. But this village also faces the bottleneck of development. Design intervention in the countryside is not about demolishing and reconstructing, but about protecting the rural culture and injecting new vitality to it.



Fig. 2. Location of Wengding Village.

Picture source: drew by the author.

A. Establishing the Concept of Design for the Villagers

Since the implementation of the construction of new socialist countryside in China, many design institutions and groups have entered the countryside, but they often put their own design concept above the needs of villagers' livelihood. Among them, there are many distinctive designs which have won many awards, but they deviated from the real life. As a result, they cannot find their place the construction of new socialist countryside. Is it because the designers don't know what they're designing for? Obviously it is not. The fundamental reason is that they did not lower the attitude as designers and actively integrate into the needs of villagers. Therefore, it is necessary to form the multi-participation construction mode of new rural community (see "Fig. 3"). The multi-participation construction mode in the new rural community is to gather relevant professional design teams, villagers, community groups and so on to cooperate and participate in the construction together. Among them, villagers' participation is the focus of rural community construction. Here, designers no longer stand high above the masses. To design for the villagers, first of all, in-depth research should be conducted to identify the problems, and analysis should be conducted based on the sorting out of rural problems, so as to realize the goal of "joint discussion over decisions, joint efforts in development, joint

administration in construction, joint evaluation of the results and sharing of achievements and flourishing industry, environment and culture".⁷ (see "Fig. 4")

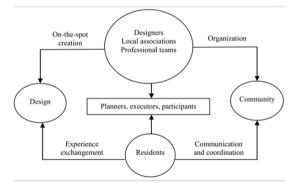


Fig. 3. Diagram of a pluralistic partnership under design intervention.

a. Picture source: the author drew on the basis of "Zhao Ronghui, Zeng Huizuo. Building a New Rural Community Under the Strategy of Art intervention — Building Tugou Community in Tainan, Taiwan [J]. Planners, 2016 (2), P110."

⁷ See Su Tong, Wang Yu, Rao Zulin. Rural Revitalization, We Are on the Road — Practical Thinking of Design Intervention in Rural Areas [J]. China Exploration & Design, 2018 (7), P24.

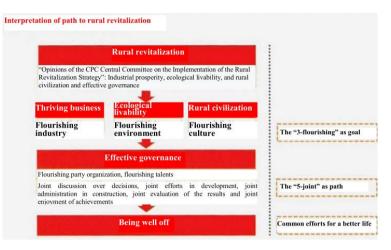


Fig. 4. Rural revitalization path: "3-flourishing" and "5-joint".

In 2016, the researchers made in-depth investigation in Wengding Village with students. Through investigation, it was found that Wengding Village has a long history, but it is relatively closed and backward due to the inconvenient external transportation and less information exchange with the outside world. The road in the village was inconvenient, not conducive to the external sales of economic products, indirectly hindering economic development. At the same time, the main product of this village was tea with low popularity and the industrial model was single. In addition, some buildings in the village were in disrepair or damaged in

Picture source: Su Tong, Wang Yu, Rao Zulin. Rural Revitalization. We Are on the Road — Practical Thinking of Design Intervention in Rural Areas [J]. China Exploration & Design, 2018 (7), P24. different degrees and the internal living environment and living conditions were poor. The whole village lacks public health facilities and basic public service facilities, with poor comprehensive services and poor living quality, which is not conducive to the development of local tourism. The small population base in the village, coupled with a large number of labor force going out, leads to the adverse phenomenon of population loss in the village, and thus lack of vitality. (see "Fig. 5")

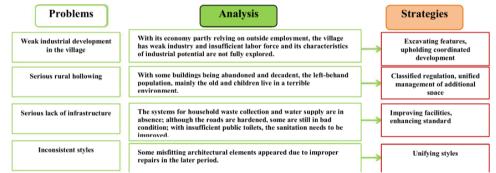


Fig. 5. Design strategy.

In view of this, the design adopts the principle of "protection first, transformation second": protecting the landscape pattern of villages and traditional village landscape; protecting the ecological environment resources around the village; protecting the cultural relics in the village and the ancient buildings; protecting and repairing the traditional architectural forms, spatial features, road paving, greening, architectural ornaments and details with historical and cultural value; protecting mountain, water system, terrain, ancient and famous trees, river channels, woodlands and artificial elements closely related to local characteristics.

In order to provide basic services and supporting facilities for Wengding Village, in addition to the renewal Picture source: drew by the author.

and protection within the village, it is also necessary to build a new village on the external site to meet the increasing customer demand of Wengding Village. Moreover, the construction of the new village will not damage the original Wengding Village. This properly solve the internal environmental problems of Wengding Village, increase the flow of people returning home, improve the hollowing phenomenon of wengding village, and drive the development of the local economy (see "Fig. 6").





Fig. 6. Planning and design drawing.

Picture source: drew by the author.

B. The Core Value Regeneration of Traditional Dwellings

On core value of traditional dwellings, Professor Zhu Liangwen, a local scholar, put forward from the origin of architecture that "Dwellings are people's residences, so the essence is dwelling; it is true of traditional residence, also of modern residence. To explore the core value orientation of traditional dwellings, it is necessary to start from the origin of residence. The core value of traditional dwellings should be explored from the origin of residence, not in the appearance of the house, but in the inner nature of residence." And he summarized the core value of traditional dwellings from four aspects: adaptability in the natural environment, rationality in real life, variability in time and space development and inclusiveness in cultural exchange.

The core values of traditional Yunnan dwellings are as follows: environmental value --- the adaptability of architectural form and material structure to the natural environment; use value — material needs and spiritual needs; the value of sustainable development — the "traditional residence" itself is a product of development, not a static object. With the change of time and space, the development is sustainable; cultural values - incorporating things of diverse nature.

Through investigation, it was found that Wengding Village still has a complete Wa traditional railed thatched hut and a variety of Wa sacrificial houses, sacred forests and wooden drum houses, representing that Wengding Village retained its traditional style. The whole village was built against the mountain, with a compact and layout and wellproportioned buildings. It is surrounded by trees, and has beautiful scenery, and compact space layout, which echoes the geographical conditions. However, due to some improper repairs in the later stage, there appeared some architectural elements not quite in harmony with the overall style, so that the overall style is not unified; due to the crowding of houses and the shortage of land, except for the necessary road land and living land, there is not enough space for greening, resulting in insufficient virescence. With some houses badly damaged, the quality of living environment is poor, resulting in villagers hollowing out leaving many abandoned houses. There are few public facilities and insufficient protection of the reservoir in front of the house, so the ecological environment needs to be improved. (see "Fig. 7")



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Fig. 7. The old Wengding Village.

Picture source: drew by the author. In view of this situation, all the buildings in the village were checked, and a plan for protection, repair and renovation was finally put forward after discussion with the villagers. First of all, the buildings within 45 meters from the center of village heart are protected to maintain the original appearance as much as possible. The remaining buildings shall be repaired or transformed according to actual conditions. Secondly, the damaged dwellings are divided into three levels. Level 1: with seriously damaged roof covering, the internal structure of the building is largely exposed, so there is a risk of collapse and it is not suitable for living; level 2: with relatively light roof damage, parts of the architectural framework bare, and the body of building tilts; level 3: the roof and the body of the house are undamaged on the whole, but the internal space is dilapidated, resulting in poor living conditions. For the second or third level of damaged housing, efforts should be made repair them, and for the first level of damaged housing, renovation should be made. (see "Fig. 8")

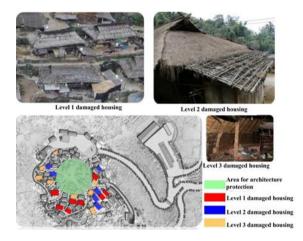


Fig. 8. Three levels of residential damage.

1) Adaptability in the natural environment: Wa folk dwellings belong to stilt style architecture, which originated from the nest dwelling in the Cangyuan cliff painting 3,000 years ago. Located in the mountains, the Wengding Village is built on the mountain, with well-arranged buildings. With limited flat land for house-building, the Wa residence there are all stilt- styled. Located in a tropical area, Wengding

Picture source: drew by the author.

⁸ Transloaded from "Zhu Liangwen. Exploration of the Origin of Residence — the Core Values of Traditional Dwellings Without Taking Shape as a Yardstick. 2013 Academic Seminar Report of the Design School of Yunnan Arts University."

Village is hot and rainy in summer, with an annual rainfall of about 2000mm. The ground floor of the stilt-style dwelling is built on stilts, which can avoid the erosion of the rain in the rainy season and facilitate ventilation and make the inside cooler in the hot summer. As Wa people in the region still a farming life, the elevated ground floor is convenient for residents to pile wood and raise livestock. (see "Fig. 9")



Fig. 9. Stilt-styled residence of the Wa people.

^{a.} Picture source: drew by the author. Local materials such as bamboo, wood and thatch were used throughout the renovation, all of which were sourced from the surrounding forest. According to Mr. Yin Shaoting's investigation, after Wa people harvest crops, they will sow some Chinese birch seeds, pine seeds and so on, so that they will cut down some to build houses when the trees grow up. Local residents also keep a certain area as thatch fallow land. They wove the thatch into grass rows to make roof coverings.

In a word, the Wa stilt-style dwellings advocate nature, adapt to local conditions, use local materials and use the rule climate, which is a manifestation of adaptability in the natural environment.

2) Rationality in real life: With the development of tourism, the reception capacity of Wengding Village gets very limited. According to the field research, there are only three farm houses in the village for tourists to have a meal and a short rest. There are also not many residential houses for accommodation, with only about dozens of beds in four houses. Therefore, with limited fund, the existing dwelling houses should be transformed to meet the existing living needs. Then some necessary reception facilities in the conditioned dwellings should be added to meet the requirements of tourism (see "Fig. 10"). It not only effectively protects the natural and cultural ecological environment of Wa village, but also conforms to the rationality in real life.



Fig. 10. The folk houses were transformed into homestay.

Picture source: drew by the author.

In order to meet the needs of tourism, public restrooms have been added. In terms of the design, the "hencoop-style" "X-shaped" model is adopted, which uses local wood as the wall material, and the local bamboo strips are woven into a network to form the roof. The whole building is light and green, which meets the needs of real life (see "Fig. 11").



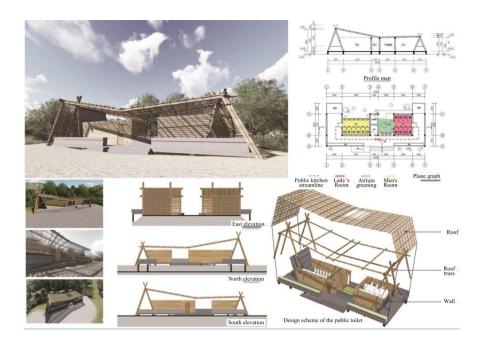
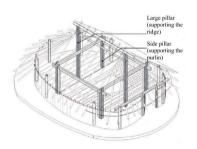


Fig. 11. Design scheme of the public toilet.

3) Variability in time and space development: The stiltstyle architecture of the Wa nationality in Wengding Village actually evolves around the type of timber frame system. In the early period, Wa people's stilt-style dwellings were semi-round and semi-square "hencoop". The round shape is derived from the shape of the "Sigangli" cave (believed to be the origin of human history by Wa people), which is a form of cultural identity and inheritance. But the round shape is affected by the timber frame system to a greater degree. The structure system of the early Wa dwellings is the old pillar system, according to which the patterns are divided into 2, 4 and 8 columns with a strict hierarchical concept. The "hencoop" belongs to the old 2-pillar system. The so-called old 2-pillar system refers to the pattern in which only two large pillars that directly fall to the ground carry the roof ridge inside, also known as the bearing spine. The old 4-pillar system refers to the pattern in which the gables have two pillars on each side. The old 8-pillar system refers to the pattern in which two more pillars were added to the gable on both sides of the old 4-pillar system to form a 4-truss structure ⁹(see "Fig. 12", "Fig. 13" and "Fig. 14").



Picture source: drew by the author.

2017 (4), P129.



Pilar supporting the ridge Carge pilar Pilar supporting the purin The purin The purin

Picture source: Zhou Qi, Tang Lizhou, Sun Jingyan. Study on the Evolution of Wooden Frame of the Wengding Wa Waist [J]. Research on Heritages and Protection,

Fig. 13. The old 4-pillar system in the old pillar system.

Picture source: Zhou Qi, Tang Lizhou, Sun Jingyan. Study on the Evolution of Wooden Frame of the Wengding Wa Waist [J]. Research on Heritages and Protection, 2017 (4), P129.

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⁹ See Zhou Qi, Tang Lizhou, Sun Jingyan. Study on the Evolution of Wooden Frame of the Wengding Wa Waist [J]. Research on Heritages and Protection, 2017 (4), P129.





Fig. 14. The old 8-pillar system in the old pillar system.

^{a.} Picture source: Zhou Qi, Tang Lizhou, Sun Jingyan. Study on the Evolution of Wooden Frame of the Wengding Wa Waist [J]. Research on Heritages and Protection, 2017 (4), P129.

Over time, to improve living conditions, local craftsmen introduced the girder structure. The early girder structure was double-slope roof, so there emerged the traditional double pitched herringbone roof in the architectural forms. Although the girder structure reduces the space occupied by pillars, for Wa people who worship pillars, the lack of pillars of belief pillar and the immature structural system made this form short-lived in Wengding Village.

With the development of economy and technology, the herringbone truss appeared. It simplified the roof form, optimized the old pillar system, and formed a new 2, 4, 6, 8 pillar structure, which gradually improved the overall frame system of the house, and formed a style of gable and hip roof. In this system which has no implication of hierarchy, the 2, 4, 6, 8 pillars are used respectively according to the size of the house, among which 6 pillars are a transitional house type ¹⁰ (see "Fig. 15").

Due to the need for culture and practical use, the Wa stilttype architecture in Wengding is constantly changing in the development of time and space, including the "hencoop" at theearly stage, the double-slope roof in the middle-stage and the present gable and hip roof, which is a living history of Wa culture and life.

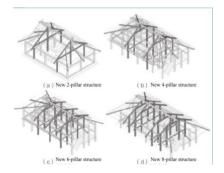


Fig. 15. The new pillar system.

a. Picture source: Zhou Qi, Tang Lizhou, Sun Jingyan. Study on the Evolution of Wooden Frame of the Wengding Wa Waist [J]. Research on Heritages and Protection, 2017 (4), P131.

¹⁰ Ditto, P131.

4) Inclusiveness in cultural exchange: The original exhibition hall in Wengding Village has been unable to meet the increasing demands of tourists. There is an urgent need to build a new hall for inheritance and study. The new hall is located between the "new village" and the "old village", which plays an excessive role. The design of the building should take into account both the modern style of the new building and the simplicity of the old one.

Due to the need of modern exhibition function, the interior space and volume of the study hall are relatively large in the hall for inheritance and study. In order to adapt it to the texture of the Wengding Village, the whole architecture is decentralized and a courtyard is introduced. With the use of the image features of Wa stilt-type residential buildings, the hall seems to be a Wa settlement, which is well integrated into the ancient village (see "Fig. 16" and "Fig. 17"). The internal structure is derived from the herringbone trusses of Wa folk dwellings. In order to reduce the internal space occupied by the pillars and the firmness of the structure, the pillars are made of hollow steel and all the pipelines are hidden in the hollow steel tube of the pillar.



Fig. 16. Design scheme of the hall for inheritance and study — design sketch.

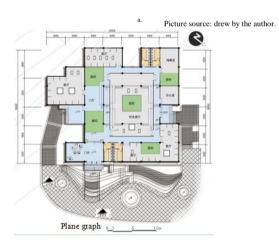


Fig. 17. Design scheme of the hall for inheritance and study — design sketch.

Picture source: drew by the author.

The hall for inheritance and study is a window of Wa cultural exchange and adopts modern construction techniques. On the one hand, the design of the hall for inheritance and study is permeated with the concept of growth architecture. It uses the image characteristics of thatched roof in Wa architecture, and uses local materials to construct and make the building with an atmosphere of "soil". On the other hand, since the traditional buildings of Wa nationality rarely have the functions of lighting and exhibits



conservation, modern techniques are used to solve these problems. Built according to the topography, the hall blends into the green mountains and forests just like the rolling hills around. It is an integration of traditional culture and modern architecture.

VI. CONCLUSION

The design intervention in the countryside should not transfer with the will of designers, but be a process of multiparticipation. Designers should keep a low profile, establish the concept of design for villagers, conduct in-depth research and identify the problems. They should conduct analysis by sorting out rural problems, seek truth from facts, so as to boost rural development with design and truly realize rural revitalization.

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