

The Concept of Residential Design of Chinese Dong Nationality

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Abstract

The traditional settlements and dwellings of the Dong nationality have important historical, cultural, and architectural values. However, with the acceleration of the modernization process, a large number of traditional Dong settlements and houses are being updated unconsciously or developed irregularly. Therefore, through the study of Dong culture related to architecture, on the other hand may lead to the understanding of Dong's decoration related to the interior and exterior design alongside with the understanding of its systematic summary which may result in the development of targeted strategies as the Dong's architectural protection and preservation; on the other hand, by introducing semiotics as the theoretical support of research, we can better analyses and understand its history, culture, and architectural value. The objectives as research data are: 1) Research on the semiotics of Dong traditional architecture 2) to research and study history, cultural capital of Dong traditional architecture 3) Understanding the concepts, principles, and symbolic logic of Dong nationality for redesign 4) used for the design of the model room, and the reconstruction conforms to the modern lifestyle. Through the use of qualitative and quantitative research to preserve the unique cultural identity of symbols consistent with modernity. Finally, the questionnaire data collection and design demonstration show the cultural connotation of traditional architecture and home design as they adapt to the modern lifestyle. The final research results show that the difficulty of inheriting architectural skills, the difficulty of preserving traditional buildings, the change of values of the younger generation of Dong residents, and the blind pursuit of foreign culture are several important factors contributing to the rapid loss of Dong traditional architectural culture. Local governments can actively guide and participate in the construction of villages, and various types of architectural experts can intervene through the combination of new technology and materials. Intervention through

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multidisciplinary integration gives a better protection plan and planning strategy. Then, cultivate craftsmen of traditional buildings, enhance national pride, and make sustainable development of Dong traditional buildings so as to protect and inherit them.

Keywords: Traditional Chinese architecture, Dong nationality, Architectural semiotics, Reconstruction of the old buildings, Adaptive design

บทคัดย่อ

การตั้งถิ่นฐานและที่อยู่อาศัยแบบดั้งเดิมของชาวต้งมีคุณค่าทางประวัติศาสตร์ วัฒนธรรมและสถาปัตยกรรม อย่างไรก็ตาม การเร่งการปรับปรุงให้ทันสมัย การตั้งถิ่นฐานและบ้านเรือนดั้งเดิมจำนวนมากได้รับการปรับปรุงโดยไม่รู้ตัว หรือมีการพัฒนาอย่างไม่สม่ำเสมอ ดังนั้นการศึกษาวัฒนธรรมสถาปัตยกรรมต้ง เป็นทางหนึ่งที่น่าสนใจในการตกแต่งออกแบบภายในและภายนอกควบคู่ไปกับการสรุปผลไปสู่การพัฒนากลยุทธ์ในการปกป้องและอนุรักษ์สถาปัตยกรรมของต้ง ศึกษาทฤษฎีทำให้สามารถวิเคราะห์และเข้าใจประวัติศาสตร์ วัฒนธรรม และคุณค่าทางสถาปัตยกรรมได้ดีขึ้น วัตถุประสงค์ของการวิจัยคือ 1) ศึกษาสัญศาสตร์ของสถาปัตยกรรมประเพณีต้ง 2) ศึกษาประวัติศาสตร์ทุนทางวัฒนธรรมของสถาปัตยกรรมประเพณีต้ง 3) ศึกษาแนวคิด หลักการและตรรกะเชิงสัญลักษณ์ของต้งเพื่อการออกแบบใหม่ 4) เพื่อออกแบบห้องตัวอย่างให้สอดคล้องกับไลฟ์สไตล์สมัยใหม่ โดยใช้การวิจัยเชิงคุณภาพและเชิงปริมาณ เพื่อรักษาเอกลักษณ์ทางวัฒนธรรมให้สอดคล้องกับความทันสมัย จากการรวบรวมข้อมูลแบบสอบถามและการสาธิตการออกแบบแสดงให้เห็นถึงความหมายแฝงทางวัฒนธรรมของสถาปัตยกรรมแบบดั้งเดิมและการออกแบบบ้านที่ปรับให้เข้ากับไลฟ์สไตล์สมัยใหม่ ผลการวิจัยแสดงให้เห็นว่า ความยากในการสืบทอดทักษะทางสถาปัตยกรรมในการอนุรักษ์อาคารแบบดั้งเดิม การเปลี่ยนแปลงค่านิยมของคนรุ่นใหม่ของชาวต้งและการแสวงหาวัฒนธรรมต่างประเทศอย่างไร้เหตุผล เป็นปัจจัยสำคัญที่ทำให้เกิดการสูญเสียวัฒนธรรมสถาปัตยกรรมแบบดั้งเดิมอย่างรวดเร็ว รัฐบาลท้องถิ่นสามารถชี้แนะและมีส่วนร่วมในการก่อสร้างหมู่บ้าน และผู้เชี่ยวชาญด้านสถาปัตยกรรมประเภทต่าง ๆ สามารถแนะนำผ่านการผสมผสานระหว่างเทคโนโลยีและวัสดุใหม่ ๆ ผ่านการบูรณาการสหสาขาวิชาชีพทำให้เกิดแผนการป้องกันและกลยุทธ์การพัฒนา รวมถึงปลูกฝังช่างฝีมือของอาคารแบบดั้งเดิม เพิ่มความภาคภูมิใจของชาติ และสร้างการพัฒนาอาคารแบบดั้งเดิมของชาวต้งที่ยั่งยืนเพื่อปกป้องและสืบทอดต่อไป

คำสำคัญ: สถาปัตยกรรมจีนดั้งเดิม, ชนชาติต้ง, สัญศาสตร์ทางสถาปัตยกรรม, การสร้างอาคารเก่าขึ้นใหม่, การออกแบบแบบที่ปรับเปลี่ยนได้

Introduction

Most of the Dong people live in the plateau and mountainous areas in southwest China, where rivers cut deep and form some high mountain ponds and rivers. Dong people are distributed in the high mountains, valleys and water level areas, where rice farming is the main factor and forest and animal husbandry is also the main factor. Because land is so precious, (Wan, 2019) even in The Pingba area, the Dong people rarely build their buildings on

flat ground, instead building them intensively on hillsides. The traditional architecture of Dong nationality is mainly made of wood. In the area near the city hall, there are some rammed earth walls or adobe brick walls and wooden frame combined with dry railings. These buildings, commonly known as "stilted buildings", are derived from nesting. The height of stilted feet adapts to the change of mountainous terrain and humid climate, minimizes earthwork excavation, and forms terrace by using mountain rock dry ramps for slope protection. The Chinese fir abundant in mountainous areas is the best raw material for construction of stilted buildings. There are some basic components of Dong village architecture, such as: Drum tower, Theatre, Folk house, Village gate, Pavilion, Wind and Rain Bridge, etc. These types of buildings constitute a complete Dong village pattern (Wu, 2018). Among these buildings in Dong communities, the most important ones are Drum Tower, folk houses and wind and Rain Bridge.

Dong people and their ancestors live and breed in the Pearl River Region in south China. They are the earliest indigenous people in Guangxi and even the whole southwest region, and also one of the ethnic groups with relatively infrequent migration activities in the whole History of China. The Dong people experienced independent development in the ancient Qin Dynasty. From the Qin Dynasty to the present People's Republic of China, (Jinjuan Ji, 2020) the Dong people experienced and formed their own unique cultural characteristics in the process of cultural development. As the carrier of the inheritance and change of Dong culture, the traditional settlements and dwellings of Dong nationality are of great significance to the study of the social history and culture of Dong nationality, and to reveal the interaction between Dong culture and other ethnic cultures.

Research Objectives

1. To research on semiotics of Dong traditional architecture.
2. To understand the concepts, principles and symbolic logic of Dong nationality for redesign.
3. To use for the design of the model room, and the reconstruction conforms to the modern lifestyle.

Research Methodology

This study adopts qualitative research methods, though. 1) Document data collection 2) Interview research 3) Network data collection and 4) Experimental Design. The data analysis process before the target design experiment was obtained by collecting information from various sources. Through content analysis and symbol analysis, the house design retained the symbol of Dong traditional architecture.

Data collection and networking is mainly the collection and collation of literature, books and network data. To solve the existing problem of traditional and modern symbiosis, it is the basis of relevant theoretical research. The questionnaire interview method aims to test the inevitability of the understanding level of the Dong architectural culture and the age of the Dong ethnic group, and to determine which groups should be the target, so as to develop a consistent architectural culture communication model.

Table 1 The Table of Questionnaire Result, 276 And 100% Of The Samples In This Study Come from Residents Living in Chengyang Dong Village, Sanjiang, As The Biggest Village of Dong.

Age	Education Level	Living Status Of House	Knowing of Traditional Architecture	Care About Architectural Culture
16-29	High	Modern	Barely Not	Don't Care
30-39	Middle	Modern	General	General
40-60	Low	Traditional	Known	Care
Above 60	Low	Traditional	Known	Care

Note. From (Author, 2021)

According to the analysis of the collected survey samples, age and education level show an opposite trend. The younger the age, the better education resources they get, but they are not interested in traditional architecture and prefer to live in modern architecture. In addition, the younger generation have less understanding of traditional architecture and pay little attention to it. On the contrary, the older the sample, the higher the understanding and emphasis on traditional architecture.

The design demonstration is based on the results of questionnaire survey and interview, and focuses on "creating" the traditional residence of Dong nationality that conforms to the living habits and development trend of users, seeking a balance between the new building and the traditional building. This building can also be used as a reference for the follow-up research on the design and transformation of traditional residence.

Research Results

1. Connotation of public buildings

In the construction of the Dong village, materials are sourced locally, (Zhang, 2010) and the Dong respect nature in their construction, using clever linking methods to save materials, and using recyclable materials for construction. In terms of style, they follow nature, and the presentation of the buildings complements the surrounding terrain and environment,

allowing people to be immersed in an ecological environment that returns to nature. (Zhang, 2018) The reason why all kinds of buildings of Dong nationality show the national characteristics of Dong nationality and the collective, inherited and regional characteristics of Dong nationality style is the reflection of local natural and economic characteristics.

There is no absolute boundary between all kinds of public buildings of Dong nationality, which is reflected in both structure and function. Look from the function, with the function of several buildings, such as drum, stage, village gate, wind and rain bridge, pavilion, although all kinds of architecture have its beauty, and function of the pursuit, but Dong building on the form and function of the bold mix, illustrates the Dong is more pay attention to practical construction, (Sanjiang, 2020) Or the pursuit of aesthetic practicality above the distinction of architectural grade. For example, drum Tower and Wind and Rain Bridge are not only places for discussion, but also places for villagers to enter and rest freely. There is no such strong contrast as in the appearance of the buildings. These phenomena show that all Dong buildings have both their main functions and complementary functions, and they are buildings with mixed functions.(Chinese Ethnic Architecture, 2022) At present, Drum Tower, Wind and Rain Bridge, village gate and Feishan Temple have become the landmark buildings of Dong village, and the bold use of various forms of these buildings shows the national character of Dong people who dare to boldly show their aesthetics and concepts and ignore trivialities.

2. Architectural decoration symbols

Decorative sculptures of Dong nationality can be basically distinguished by materials, including wood carving, bamboo carving, stone carving, clay sculpture and food material sculpture.(Diao, 2023) Dong wood carving is mainly used in architectural decoration, furniture decoration, Nuo mask, gods and handicrafts, etc. Wood buildings are typical of Dong architecture, and wood carving for architectural decoration is also widely used. (Xingxing, 2021) Bamboo carving is made of bamboo material. Bamboo carving is mainly made of bamboo stems and roots. Due to the limited scope of application of materials and the small shape, there are mainly exorcism masks and handicraft ornaments. Stone carving is made of stone. Bluestone is the most common stone carving of Dong people, mainly appearing in architectural components, mausoleum decoration, gods and beasts, production and living utensils, handicrafts and ornaments. Clay sculptures are more statues made of clay or cement, which are mainly used in architectural decoration, such as images of gods and beasts, and have strong connotations of cultural symbols. (Golden Age 554, 2022)

The Dong people place many beautiful connotations and thoughts of praying for health in the three-dimensional carvings of animals and figures. On the one hand, they reflect the historical and cultural content of the Dong people and convey the thoughts and feelings of the local people. On the other hand, they show the local living customs and religious

beliefs. In short, whether animal three-dimensional decoration or character three-dimensional decoration is using and the image of a certain specific symbols, enlightenment and education people to grasp the abstract meaning of specific affairs, understand the thoughts and feelings of the Dong people or thinking, artistic conception is also express the desire for a better life, the pursuit of the embodiment of the strong desire of good luck. (Xu, 2020)

3. Traditional folk houses

As the name implies, residential space of Dong people is the space where Dong people live. The common form of residential space is usually rail-type building, and the functional zoning is mainly as follows: the first-floor stock poultry and stores sundries, etc.; The second floor is the main area for human life; On the third floor there is a barn and storage of idle household appliances. Most of the residential buildings have bucket structure, and the columns, fang and beams are connected with mortise and tenon to form the skeleton of the house. (Wei, 2019) Then place wooden boards between the tie beam and roof beams on the same floor to form floors; Boards are also laid for walls in the vertical direction; Sandalwood was placed horizontally on top of the pillars of each house, then iron nails were used to stabilize the rafters, and finally stone tiles were covered to form the roof.

Generally speaking, from the first floor to the second floor of the house, the first arrival is the location of the "outer corridor" that is the hall. When outsiders come in, they often call the master here first. They can only wait here before they get the master's response, so they can't rush to the hall, which is very spacious and narrow. (Xiong, 2017) Some houses cantilever out of the eaves, placed sandalwood, rafters and covered with stone tiles to form the waist eaves of the house, not only can shelter from wind and rain, protect the wooden structure of the house, but also enrich the sense of building layers, very beautiful.

To understand the characteristics of the Dong people, we need to start from the fire pond, which represents the basic unit of the Dong people's society -- the family. The most basic living unit of a family should include the functions of eating, sleeping and receiving guests (Zhang, 2020). All these activities can be completed by the fire pond. A complete residential house is generally centered on the fire pool room, plus bedrooms, storage rooms and other rooms, which is composed of one or several such units, as well as corridors, stairs, halls and other public Spaces (Mengze, 2023).

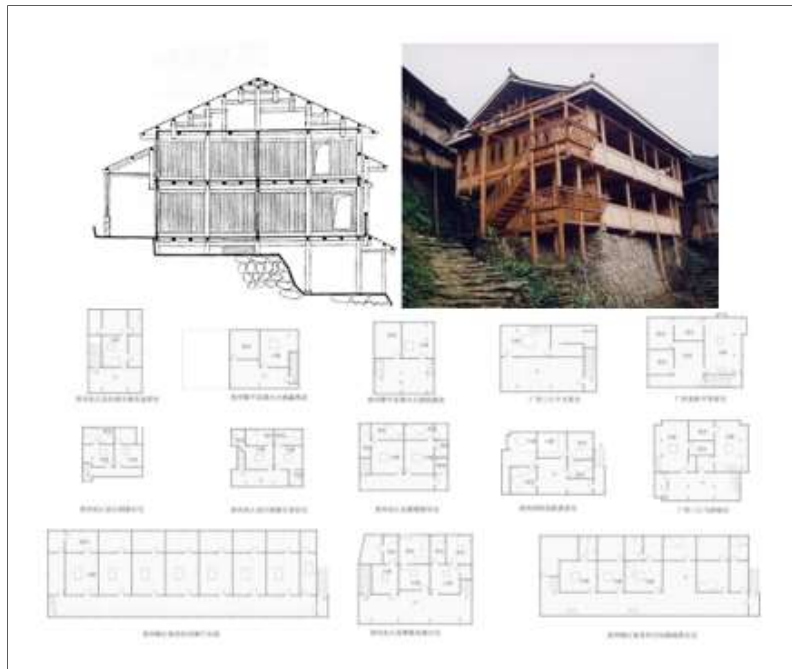


Figure 1 The Detail of The Dong Residence. From Lin Cai, Research On Traditional Villages Of Dong Ethnic Communities, PhD Dissertation Of South China University Of Technology.

Note. From (<https://www.docin.com/p-852829947.html>, 2004)

4. Experimental Design

The design based on the transformation of traditional local-style dwelling houses of Dong ethnic group from the strategy, which in order to seek balance in the traditional architecture and modern architecture, the modified architecture is more suitable for the new age way of life, but you need keep Dong traditional architectural symbol culture in a certain extent, and solve the problems of the current study found that, to adapt to the Dong people living habits.



Figure 2 The Exterior Rendering Picture, Design Thought Try to Keep Their Traditional Architecture Unchanged Premise.

Note. From (Author, 2021)

On the premise of maintaining reasonable cost and facilitating construction, the construction materials of the building simplify some of the original complex decorations and still retain the cultural symbols in the traditional building, so that it will still form a fusion with the surrounding from the top perspective and will not appear out of place.

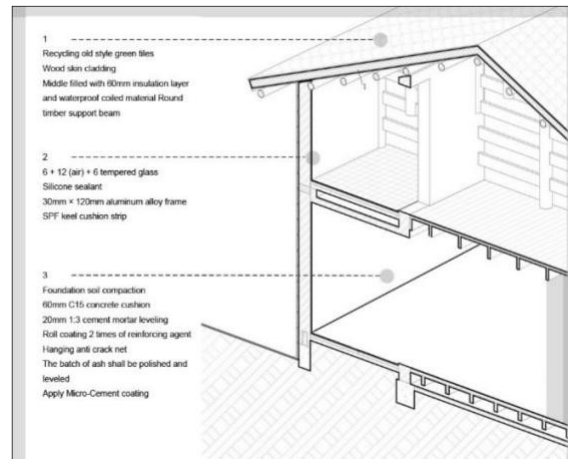


Figure 3 New Construction of The Building, Optimize The Material And Structure, Make The Building Itself Is Not A Guest but The Host's Role Of The Environment.

Note. From (Author, 2021)

Surrounded around the metope of the part is the combination of traditional and modern, and in all the traditional wooden structures, because in the reform in order to meet the requirements of modern architecture of bearing, the original supporting all wooden pillars into reinforced concrete material, to gain a better carrying and durable structure, to foil to the exterior decoration of the wooden grille with vacuum double-layer glass, It can reduce the impact of modern materials on the image of the building itself and solve the problem of poor sound insulation and lighting.

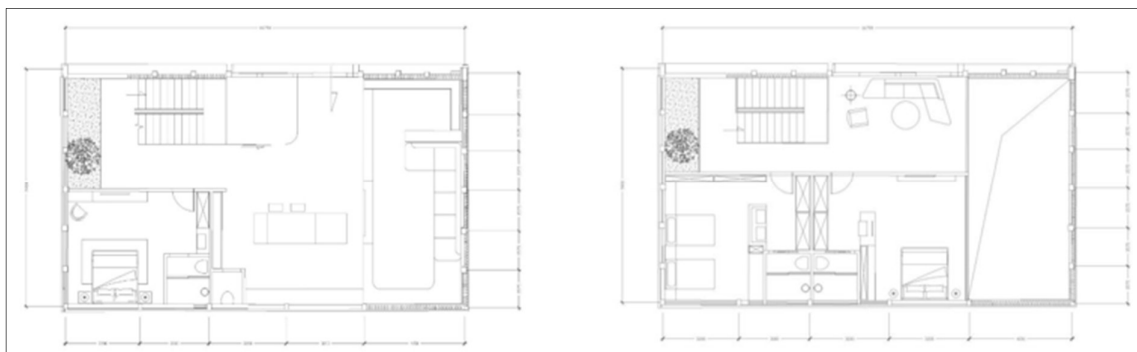


Figure 4 Interior Layout, Interior Part Keeps Two Layers of Internal Space Layout, And According to The Dong Traditional Culture.

Note. From (Author, 2021)

Planning two layers use function pattern, a layer as a family of public activity space and the elders of the bedroom, on the second floor for the second generation family activity space, includes family little sitting room and two rooms equipped with independent toilet in the bedroom, The choice of material is to brush the whole house in recent years more popular micro cement material, the material has better adaptability, can be used in all kinds of extreme environment and beautiful.




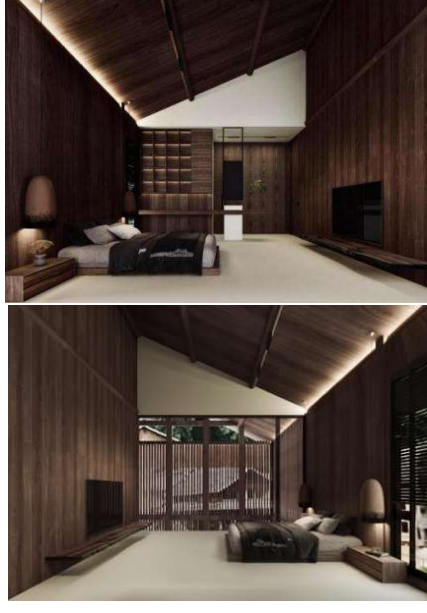
Figure 5 The Level 1 Detail, The First Floor As A Family Of Public Activity Space And The Elder’s Bedroom.

Note. From (Author, 2021)

Table 2 The Function of The Second Floor

The picture of the second floor	Explain of function
	<p>On the second floor, the two bedrooms are connected by a corridor. The wooden grating on the wall also adds interesting light and shadow effect to the originally simple interior space, ensuring better privacy on the premise of providing light into the space.</p>

Table 2 (Continued)

The picture of the second floor	Explain of function
	<p>Floodlights on the wall and roof further deepen the atmosphere of the space, and also create a suspended roof style, reducing the sense of pressure on the space of the roof.</p>
	<p>The design of the bedroom retains the wood-based space design and the warm space texture. The locally made terra cotta urn is used as the chandelier at the head of the bed, the deadwood wood with a certain sense of age is used as the TV counter, and the bamboo woven by local craftsmen is used as the pattern of the wardrobe door, etc. Each object in the design is designed to reflect as much as possible the memory symbols related to the local culture.</p>

Note. From (Author, 2021)

Design in as much as possible to solve the intractable diseases at the same time, the introduction of modern design language, to optimize the ways to keep the traditional space form of Dong folk houses, can make the houses more modern, more in detail and is embodies Dong the connotation of architectural culture symbol, in the "innovation" at the same time, also in the "conservative" in another way.

Conclusions and Discussions

Dong timber structure buildings have precious historical, artistic and scientific value. Based on the summary of previous research results, this paper studies the structure, style, construction technology and materials of Dong ancient timber structure buildings. Selecting representative and universal significance of timberwork building as the research object, and analyzing the cultural symbols and symbolic connotation construction, protection and utilization of buildings in Dong, provides the theory basis, promote to form a good circulation of Dong traditional architecture protection and utilization, and extensive survey and visiting

villages, through the establishment of questionnaires and interviews with local residents and the form of a craftsman, This paper explores the causes of the current development dilemma and demise of Dong architecture, tries to find a way out through design practice, and draws the following conclusions:

1. Starting from the introduction of Dong culture, this article analyzes the original natural and cultural environment of the Dong ethnic group in the Sanjiang region. Through exploring the surface and deep structures of architectural symbols, it introduces the production and life of the Dong ethnic group, and elaborates on the many relationships between the Dong ethnic group, architecture, and nature.

2. This article selects two types of wooden buildings as the research objects. One is a public building that consolidates the confidence of the people and enhances the centripetal force of the nation. The other is the traditional residential architecture of the Dong ethnic group. Taking these two types of buildings as the main research objects, architectural symbols are extracted, and combined with Morris' architectural semiotics theory, it is explored that the Dong ethnic group pursues architectural decoration and construction with peace and happiness as their aspirations.

3. The semiotic characteristics of architecture itself, combined with traditional folk customs, excavate the structural characteristics of its architecture, analyze its symbols, and summarize the core spirit of people-oriented, unity and harmony in the ethnic group to demonstrate its composition and characteristics.

4. The wooden structure of the Dong ethnic group reflects the cultural connotations of the Dong ethnic group for hundreds of years. It is particularly important to review literature, conduct visits, and conduct questionnaires in the context of intangible cultural heritage to sort out the inheritance difficulties of the Dong ethnic group's wooden structure in Sanjiang, and attempt to transform the design foundation of the project, while retaining its cultural symbol connotation, to expand another possibility.

Suggestions

1. Local governments should correctly guide and participate in village construction

The local government should carry out a detailed investigation of the Dong traditional villages to understand the current situation of the villages, take the villages with relatively intact architectural style as the key protection object, and try to preserve the original function and structure of the buildings. For the changing Dong Village, give correct and favorable guidance, preserve the essence of national architecture, and guide the concept of green architecture in harmony with nature. Focusing on the landmark buildings of Dong Villages, the government invests to participate in the design and construction of ethnic architectural forms, and consider the comfort, safety, hygiene, nationality and regional characteristics of folk

dwellings. On the other hand, through propaganda and education, more Dong people can love the splendid culture of their own nation and develop national pride and identity.

2. Introduce professionals to develop and design Dong village buildings

Introduce professionals Dong village building is studied for different regions, find the paradigm of regional features, refined elements of architectural culture of Dong, through modern means, summarizes the construction way of traditional architecture and technology, the traditional form, using the advanced materials and technology to Dong construction to the development and protection, excavate the essence of the traditional dwellings, The combination of traditional folk houses and modern technology makes the building form of Dong folk houses develop towards the direction of national characteristic, comfort and modernization.

3. Planning building protection planning and classified management of Dong villages

Relevant experts detailed investigation on the Dong village distribution area, to the integrity of the traditional Dong village architecture, artistic quality and on the basis of the typical architectural style, focus on the protection of original village, protection of the village to take the original ecological architectural culture protection method. According to the principle of combining utilization and maintenance, key protected villages can be developed into tourist attractions or built into Dong architectural culture protection villages. Through rational utilization, economic and social benefits can be created to better develop and preserve their architectural styles in utilization. For general village, introduce new building materials and construction technology, build a modern, habitability and the safety of the modern villages, modern materials and technology that can reduce the use of wood, effectively protect the forest resources, is advantageous to the fire, it can also meet the living customs of Dong people.

4. Multidisciplinary integration and intervention

The protection and inheritance of traditional architecture by integrating multidisciplinary fusion research, such as: more professional statistical way for more research data, the scholars in various areas in the world, for each region of discussions between the achievements of traditional architecture and architecture specialty experimental model of intervention, etc.,

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