Research on Traditional Architectural Shape and Spatial Art Characteristics of Dong Nationality in Guangxi Based on Computer Software

Ting Wen\textsuperscript{1,*}
\textsuperscript{1}School of Art and Design, Guilin University of Electronic Technology, Guilin, China, 541004

*Corresponding author e-mail: dept4js@guet.edu.cn

Abstract. In Guangxi, there are still many ethnic minorities of the older generation who still adhere to the tradition of wearing their own ethnic architecture and silently inherit the ethnic culture carried by the ethnic architecture. However, the ethnic minorities of the "new generation" unconsciously want to "relay" and have no ability to interpret this "history book without characters". Based on the contemporary computer software technology, protecting the architectural culture of Dong nationality in Guangxi, promoting the harmony of national spirit inheritance and aesthetic diversification, has far-reaching significance in the construction of a harmonious society.

Keywords: Dong Nationality, Architectural Culture, Protection, Inheritance

1. Introduction

The architecture of The Dong nationality in Guangxi is colorful, bearing the spirit, culture, ideal and belief of the nation, and it is the symbol and carrier of the traditional culture of the Dong nationality in Guangxi, as well as the living fossil of history, containing rich historical, social and cultural connotations. The authors investigated in an individual workshop of ethnic architecture in Longsheng, which specializes in making buildings of all ethnic groups in Longsheng worn for festivals by cadres of some government offices and units in Longsheng. When asked about the "historical story" of architecture and the "significance of patterns", the owner, who is also a clothes maker, said that she had heard vaguely from her ancestors when she was a child, and that now making ethnic buildings was just a copy. Half-jokingly, she reminded the authors to take pictures and find out what they meant by using baidu, the "most modern and fastest" online service. Unfortunately, Baidu is not an encyclopedia, many mysterious patterns which can be interpreted.

2. The architectural culture of Dong ethnic group in Guangxi is on the verge of disappearing

2.1. The ethnic symbol function of minority architecture disappears

Ethnic architecture has always been the symbol of ethnic groups in history, but the symbol function of architecture has basically disappeared. When the author read a college was a northern female
classmate asked "have you ever seen the Zhuang nationality". "You see it now," was the reply. After knowing that the author is the Zhuang nationality, the student said that the Zhuang nationality in her imagination should wear their own national architecture, but the author was all Sinicized. The author was born in a Zhuang family in Suolue Township, Bama County, West Guangxi. This area is inhabited by Zhuang, Han, Yao and other ethnic groups, of which Zhuang people account for 53.12% and Yao people account for 20.48%. Nowadays, in order to investigate the architectural culture of ethnic minorities, we have to go deep into the rural areas where transportation is still underdeveloped, so as to gather precious architectural culture of ethnic minorities.

2.2. The heirloom of ethnic minority buildings is facing loss
Based on computer software, it can intuitively analyze the architecture in the minority areas. Many of the buildings of the Dong ethnic group in Guangxi are treasures, some of which have become heirlooms for ethnic minority families. Last year, the author and my colleagues went to Longsheng Autonomous County to investigate ethnic minority buildings. In Longsheng County, we occasionally saw ethnic minority compatriots wearing ethnic architecture. A friend said she wanted to take us to a village dozens of miles away from the county. So she called her octogarian mother in her hometown and got everything ready. Who knows the warm-hearted old man early the next morning with buried in the bottom of the box for many years a set of ancestral Yao rushed to the county daughter's home waiting for our arrival.

The old people still keep the habit of wearing the bowl Yao, ancestral buildings are now very precious, not only have a complete yard, but also include such a very precious drum tower as shown in figure 1.

![Figure 1. Drum Tower in Dong architecture, Guangxi.](image)

2.3. Spatial characteristics of ethnic minority buildings
Ethnic architecture masters are in the folk, but as time goes by, the masters who can make traditional and exquisite ethnic architecture are getting older and older, and their exquisite skills are lacking. My mother was a local master at weaving and dyeing, growing cotton, spinning, weaving and dyeing indigo. During the difficult times when we could only buy cloth with cloth tickets, my mother worked on the ground during the day to earn her wages, and every night she made cloth for our brothers and sisters to make clothes and quilts. The author reads the university to study is the dye completes the major, is still engaged in now the dye completes the technical specialized teaching, is actually by the mother's osmosis. Unfortunately, more than 10 years ago, thought has completed the historical mission of the mother "golden dish wash hands", became the last local will loom, dye VAT shelved in the attic
of the people, then the loom has decayed, is now hard to find its figure.

![Figure 2. Aerial photography of Dong Nationality in Guangxi processed by computer software.](image)

2.4. The traditional architectural culture of Dong nationality in Guangxi is facing oblivion

After thousands of years of inheritance from generation to generation, ethnic minority buildings solidify and formalize their own historical culture, religious belief, aesthetic taste and folk ideas in the styles, patterns and colors of ethnic buildings, which are the "history books without characters" worn by ethnic minorities. However, as an important carrier for the inheritance of ethnic minority culture, ethnic architecture is on the verge of disappearing, and ethnic architectural culture will be difficult to be inherited or even forgotten by people. On the one hand, the aesthetic concepts and values of ethnic minorities have changed. Young people love fashion and follow fashion, and regard their national architecture as "old-fashioned".

3. The architectural culture of Dong nationality in Guangxi contains national spirit and diversified aesthetic concepts

3.1. The architectural culture of Dong nationality in Guangxi contains the national spirit of striving for advancement

National spirit refers to the long development process in which a nation ADAPTS to the living environment, transforms the world, and forms its own unique language, customs and humanistic traditions, showing its excellent thoughts, noble character and firm ambition, which is the spiritual support for the survival and development of a nation. The colorful dong architecture in Guangxi has a long history and is the symbol and carrier of the traditional culture of The Dong in Guangxi as well as the living fossil of history, which contains the national spirit of striving upward and buckling.

Only understand national architectural culture connotation, can the national architecture reflect have deep understanding of the national spirit. All kinds of patterns and colors on the dong architecture in Guangxi have almost all kinds of beautiful legends and stories, which silently tell the suffering history of the nation and also reflect the national spirit of perseverance.

Jinxiu County in south Dan yao, yao, ruyuan yao women wear coat are printed on the back of a founder embroidery, legend has it that it was "pang Wang seal". It is said that the yao's pan King seal has been taken away by the chieftain. In order to remember the Pan King seal, people embroider it on their clothes. "Pan King seal" not only serves as a unique architectural symbol for the discrimination between Yao ethnic groups, but also reflects the yao ethnic group's national spirit of striving to make
progress.

Black county is a symbol of clan cloth zhuang ethnic group -. They wear black clothes and scarves, worship black, black as the United States, known as the most distinctive ethnic characteristics of the Zhuang. Legendary legend story, "black" carries the spirit of the black zhuang nationality of unremitting self-improvement.

3.2. The architectural culture of Dong nationality in Guangxi contains the national aesthetic concept
Aesthetic value is one of the important functions pursued by architecture. The formation and development of Dong architecture in Guangxi are always driven by the psychology of appreciating, pursuing and creating beauty of all ethnic minorities in Guangxi. The architecture of all ethnic minorities shows their own aesthetic consciousness and aesthetic concept in an all-round way.

Living in different regions, different geographical environments and natural conditions, the Dong nationality in Guangxi has formed its own unique aesthetic standards and different aesthetic orientations from other nationalities due to the restrictions and influences of economic forms, living customs, religious beliefs and other factors. The costumes of Dong nationality in Guangxi are different in styles, colors, materials, types and crafts, so they constitute a rich and colorful treasure house of national architectural art. Miao nationality is one of the ethnic groups with the most branches in China. Due to the influence of the mountain natural environment in which they live, the clothing of different branches of Miao nationality has great differences, with rich styles, gorgeous colors and strange patterns.

3.3. Protect the architectural culture of Dong nationality in Guangxi, and promote the harmony of national spirit inheritance and aesthetic diversification
National spirit is the most core cultural element for the survival and development of a nation. The promotion and cultivation of the Spirit of the Chinese nation is a powerful ideological driving force for the Chinese nation to live, multiply, and continue to develop and grow. In guangxi dong architectural culture disappearing under the grim situation, strengthen the protection of guangxi dong architectural culture, is to all the minority nationalities in the long history of China in guangxi through accumulation and inoculation and formation of the unique spirit of the inheritance and development of quality, is also carry forward the "unity, harmony, rushed to open patriotic dedication, tolerance, innovation" the embodiment of spirit of guangxi, promote equality among all ethnic groups in guangxi coexistence and harmonious development.

In the face of the present situation of guangxi dong architectural culture of disappearing, guangxi local scholars and people or by project or by collect architectural culture or notice written consciously shoulder protection and inheritance obligations and responsibilities of architectural culture of dong ethnic group of guangxi. To protect the ecological environment of national architectural culture, we will carry out the three-way linkage project of "government-led, non-governmental initiative and residents' participation"

4. Conclusion
The intrinsic value and external formal beauty of Guangxi Dong architecture is the foundation of inheritance and protection. To protect the architectural culture of Dong nationality in Guangxi and promote the harmony of ethnic spirit inheritance and aesthetic value diversification is not only the appreciation and recognition of the aesthetic value of the architecture of guangxi minorities, but also the praise of the spiritual culture of guangxi minorities. How to save the architectural culture of Dong nationality in Guangxi, which is on the verge of disappearing, has become an important issue concerned by many scholars and insightful people at present. Protecting the architectural culture of Dong nationality in Guangxi, promoting the harmony of national spirit inheritance and aesthetic diversification, is of far-reaching significance in the construction of a harmonious society.

Acknowledgments
1. The Philosophical and Social project launched in Guangxi Province: “Research on the Relationship between Visual Symbols and Ethnic Identity of Dong Nationality in Guangxi Province” (Project Number: 18FMZ007);

2. The Science and Technology Base and Talent specialization project: “Study on the Spatial Concept and Symbolic Representation of Dong’s Art” (Project Number: AD18281023).

References
[1] Zheng H C, Suo J F, Cao Y J, et al. An Analysis of Characteristics of Traditional Architectural Settlement of Dongxiang Nationality [C]// 2014 International Conference on Mechanics and Civil Engineering (icmce-14), 2014.
[2] Yanping D, Shupeng L. Research on the Spatial Distribution Characteristics of Traditional Villages in Shanxi Province Based on GIS [J]. Journal of Taiyuan University of Technology, 2018.
[3] Minzhi L. Research on the Control Planning of Architectural Features Based on the Construction of Traditional Urban Characteristics [J]. South Architecture, 2016.
[4] Wong C K. Attitudes and Achievements: Comparing Computer-based and Traditional Homework Assignments in Mathematics [J]. Journal of Research on Technology in Education, 2001, 33(5): N/A.
[5] Tang, Xiang X. Three Adaptabilities of the Traditional Vernacular Architecture of the Han Nationality in Lingnan [J]. Applied Mechanics & Materials, 2014, 644-650: 5109-5112.
[6] LI Yun-qiang, QI Wei, WANG Dan. Research on Spatial Distribution Characteristics of Rural Settlements in Mountainous Areas at County Level Based on GIS: A Case Study in Qixia City [J]. Geography and Geo-Information Science, 2011.