

DESIGN OF STREET CULTURAL CREATIVE LIGHTING FACILITIES BASED ON HMONG CULTURE IN GUIZHOU

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Abstract: In order to actively respond to China's policy of vigorously advocating cultural construction and promoting the culture of regional ethnic minorities, this paper actively innovates the method of inheriting ethnic culture, draws on the excellent cultural symbols and genes of regional minority cultures, takes the traditional culture of Hmong people in Guizhou, China as an example, extracts the line and shape characteristics with Hmong temperament from the representative Hmong cultural elements, refines the key design elements, and combines them with the key design elements and the art design techniques. A series of cultural and creative lighting facilities are designed to meet the requirements of Guizhou Hmong culture and modern use. At the same time, The article summarizes the principles and methods of extracting elements of regional minority culture, and provides new design ideas for cultural heritage protection and regional creative design.

Key words: Hmong nationality in Guizhou; National culture; Cultural and Creative Lighting; Cultural symbols; Lamp design

0 Introduction

Regional ethnic culture reflects the process of cultural exchange, borrowing, integration and absorption of a region over a long period of time, and reflects the inclusion of different cultures in each region. In the past, the "north-south city, big and small city" town model lacked characteristics, which was the public's aesthetic criticism of China's urbanization construction. In recent years, under the influence of modern design, the standardized formwork buildings of reinforced concrete and glass curtain wall are slightly monotonous due to the lack of regional folk cultural characteristics. Among all kinds of urban public facilities, street lights are the most dense and numerous, and assume the role of lighting guidance, which is known as the "eyes of the city" and can visually convey the cultural connotation and regional characteristics of the city ^[1]. Streetlights have always been the embodiment of the cultural characteristics of urban areas and one of the main carriers of urban culture and creativity. Qiao Yu et al ^[2] based on the design transformation of Shannon-Weaver communication model for the cultural symbol extraction into street light design of Yingxing Lou in Lishui City. Zhu Hongxuan et al ^[3] developed a modern streetlight modeling design from the cultural perspective of the Northwest Lixia. Qi Hao et al ^[4] analyzed the design of ceramic street lamps in Jingdezhen and proposed how to improve the duality of practical and aesthetic functions of ceramic products through design. This paper takes the Hmong culture in Guizhou, China, as an example, by

refining the historical and cultural elements of the Hmong settlement in Guizhou and combining them with contemporary art design methods to form a set of effective regional cultural and creative design templates. The rapid development of Guizhou's tourism and cultural industry in recent years has provided a whole new opportunity for the dissemination of local ethnic culture. By creatively combining the Hmong cultural elements of Guizhou with the street cultural and creative lighting facilities, this study makes the ethnic cultural elements present in a way that is more in line with the aesthetics of the public, adding new vitality to the dissemination of regional ethnic culture.

1. Hmong cultural elements in Guizhou

The number of Hmong people in Guizhou province accounts for 2/3 of China's Hmong population, with about 4.3 million Hmong people spread throughout the province. The Hmong are an ancient "migratory" people whose origins can be traced back to the Yanhuang era. In the long struggle, integration and identification of Hmong culture with other cultures, the unique spirit of resistance and migration of the Hmong people has gradually formed a visual aesthetic style with national characteristics, of which Hmong totems and Hmong decorations are the main representatives.

1.1 Hmong Totem

The ancient and simple thinking of the Hmong people is reflected in the fact that they regard some plants and animals that exist in nature as their ancestors, and in their long agricultural civilization, the Hmong have produced the worship of nature spirits and formed their unique totem worship culture. The Hmong totem is not a mechanical copy of objective things in nature, it is a spiritual product of the Hmong people who put their strong feelings of their ancestors on the pattern. These symbolic motifs, which embody the primitive religious beliefs of the Hmong ancestors, contain the fertility worship, nature worship, and the euphoric desire for a better life of the Hmong people [5]. The totem patterns of the Hmong people in Guizhou are diverse, and can be broadly divided into natural patterns and geometric patterns, with natural patterns being divided into plant and animal patterns.

1.1.1 Natural pattern

(i) Botanical motifs. The Hmong ancestors often added many rich and diverse plant patterns when making silverware or clothing, as shown in Fig 1. These plants are given mysterious symbolic meanings, such as the curly grass pattern, mostly with flowers and plants as the subject, curling, twisting and symmetrically circling, a manifestation of the Hmong people's reverence for life and reproduction; Another example is that the Hmong people believe that the maple wood is a divine object to protect their homes, is the incarnation of the Hmong ancestor Chi You, so the maple wood pattern is commonly seen on clothing and utensils.



Fig 1. Botanical patterns in Hmong embroidery

(ii) Animal prints. Hmong animal images also have a rich meaning, the Hmong people's good wishes for life are often pinned on animal patterns, which symbolize happiness and health, such as dragon patterns, fish patterns, cow horn patterns and other common patterns. Animal prints can enhance both the beauty of the product and the hierarchy of the pattern, and then finally, through the color palette, animal patterns gradually form the unique aesthetic sensibility of the Hmong people, as shown in Fig 2.



Fig 2. Animal motifs in Hmong batik

1.1.2 Geometric patterns

Hmong people usually use rich geometric patterns for interlacing, such as symmetry, repetition and continuous and other combinations of patterns to achieve the diversity of patterns, so that the sense of rhythm between geometric patterns becomes lively and dynamic, as in Fig 3. For example, the spiral pattern is the "symbol of new birth", which is derived from a vigorous fern, whose curved form resembles a mammal encircling its mother, expressing the desire of the Hmong ancestors to continue life and reproduce from generation to generation.

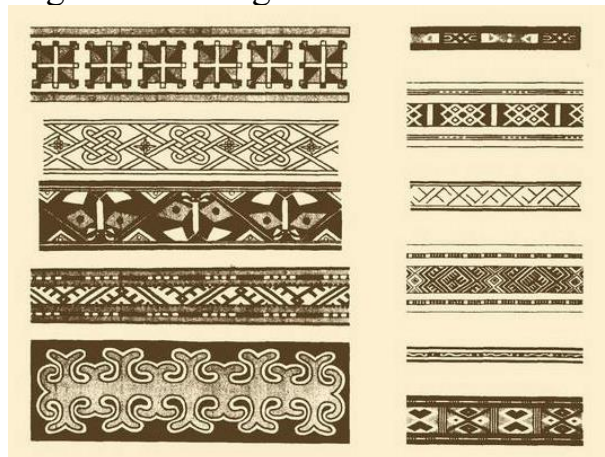


Fig. 3. Some of the Hmong geometric patterns

1.2 Hmong Silver Jewelry

Hmong silver jewelry with exquisite patterns, rustic forms and fine workmanship, which is like a document recording the history of the Hmong people, recording the evolution and development of the economy, culture and art of the Hmong people. According to the "Chronicle", the image of Chi You "copper head and iron forehead, after eating iron, ears and temples like a sword and halberd, head with horns, and Xuan Yuan fight, with horns against people". "Copper head and iron forehead", is said as the ancestors of the Hmong Chi You soldiers clad in armor, brave and good at fighting. "ear sideburns like a sword and halberd, head with horns", then the head wears armor, shaped like a cow horn hat.^[6] Therefore, today the Hmong women in Guizhou wear cow horn hats, wearing silver pendants, the legacy of Chi You. The Hmong people choose mostly natural objects in the choice of silver patterns; The decorative technique adopts the interweaving of illusion and real image, abstract and figurative, breaking up the natural and objective objects in real life and then reconstructing them into new artistic forms and aesthetic contexts, as in Fig 4. Hmong silver jewelry are precise, orderly, sparse and colorful, achieving a high degree of unity between decoration and artistry, reflecting the unique aesthetic sensibilities of the Hmong people, and also containing the memory of their ancestors.

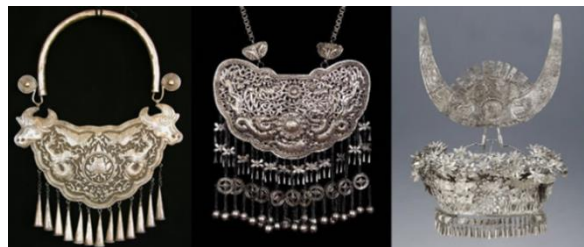


Fig. 4 Exquisite Hmong silver jewelry

2. Overview of Cultural Elements Extraction

When extracting the cultural elements of cultural and creative design, we should use "tangible" symbols to convey "intangible" culture. Elemental symbols in the design of cultural and creative products can be "reproductive" applications, i.e., the use of realistic techniques to directly express cultural elements in the design scheme, such as the direct reproduction of forms, colors, patterns, etc; It can also be an "expressive" application, which means that the symbolic elements are refined again according to the design requirements and combined with the lines, shapes, colors and other elements in the product to create a new product image.

Most of the cultural elements mentioned above exist figuratively in real life. When using such cultural elements, directly adopting their forms will make the product too straightforward, lacking a certain subtlety and artistry. Therefore, it is necessary to follow certain principles and methods of extraction and adopt "expressive" techniques to give it a higher aesthetic value.

2.1 Principles of cultural elements refinement

1. Harmony. The Chinese people have always advocated the idea of "the unity of heaven and man", and traditional Chinese Confucianism and Taoism both recognize the way of harmony, which is deeply integrated into the aesthetic sensibility of Chinese art. When extracting design and cultural elements, visual balance should be

pursued among size and proportion, contrast and unity.

2. Ambiguity. The subtlety is one of the major artistic traits in traditional Chinese culture, which focuses on an expressive effect of the endless meaning of words. Throughout thousands of years of history, this subtle quality has been incorporated into countless classic poems, exquisite works of art and majestic architecture, forming the national character of the Chinese people and influencing their artistic aesthetics and spiritual and cultural pursuits. Therefore, in the extraction of cultural elements, the beauty of subtlety is often expressed in the shape, color and other aspects, and the product will pursue the visual effect of introversion, simplicity, elegance and inclusion.

3. Representation. When refining cultural elements, it is required to make them remain highly representative on the basis of harmony and subtlety, etc. On the one hand, it allows the final design product not to deviate from the theme and can direct the user's imagination to a specific area without ambiguity at the moment of contact with the product; On the other hand, it can also enhance the cultural connotation of the design product and make it more artistic value.

2.2 Cultural elements extraction method

1. Contour profile extraction. The outline shape is the most intuitive visual cognition for users to recognize objects, and simple outline extraction can be obtained by tracing the outline of elements. Subsequently, the principle of subtlety and conciseness should be followed, taking the best part of it and removing the interference of its complicated details, while at the same time making the outline recognizable.

2. Structural abstraction extraction. For objects with relatively simple outer contour composition, the simple extraction of contours may yield monotonous and boring linear features, which are difficult to apply to specific designs. In this case, we can consider whether it has some unique structure, and extract the lines that reflect the structural features or divide the structural levels together with the basic shape.

3. Material extraction. It is written in the "Kao Gong Ji" that "the sky is sometimes, the earth has the air, the material has the beauty, the worker has the skill, together with these four, then can be good." In other words, as early as the Spring and Autumn and Warring States period, the ancients realized that "materials have beauty" - the important influence of materials on the creation of things. In addition to having a significant impact on product design, materials can also convey a certain degree of regional cultural identity. For example, bamboo, which is native to the south of China, symbolizes the qualities of resilience, temperance and understatement in Eastern culture, so the use of bamboo in products can give them a strong oriental flavor.

4. Color extraction. Compared with shapes and other elements, color gives people a more intuitive and instinctive feeling, and has the function of mobilizing people's emotions. In addition to this, different ethnic cultures also have their own specific color schemes for architecture and clothing. Therefore, color extraction is also an important method in culture extraction.

5. Application of borrowing techniques. When there is a strong logical connection between two images, consciousness can link the two together, from one to the other. If it is difficult to refine from the design object itself, you can use the borrowing

technique to abstract the related things.

2.3 Elemental Applications

After the initial extraction of elements, they are usually rough and need to be refined if applied to actual design cases. For example, the basic elements of point, line and surface can be used to reconstruct the object, and then different design solutions can be developed through morphological deduction, and appropriate graphic techniques can be used to express the design concept according to the semantic meaning to be expressed. When performing refactoring:

1. The split elements may be locally scaled, or partially exaggerated, as appropriate;
2. Form refinement, discarding the complicated details, retaining the semantic elements, maximizing the simplification and refinement of the modeling form.
3. Optimize the lines and replace irregular graphics with regular ones to give them a sense of design.

3. Guizhou Hmong culture of street cultural and creative lighting facilities design

This study focuses on the design of street cultural and creative lighting facilities in Hmong settlements in Guizhou, putting the methods mentioned above into practice, requiring that the final design output should not only have a good integration of cultural elements, but also be able to be used in various scenes without appearing abrupt, and at the same time meet the overall style and usage needs of modern cities. Therefore the design style keywords are traditional, ethnic and modern to initially position the overall visual image of the design.

The series of lighting facilities to Hmong cow horn silver hat and Hmong costume pattern as the design inspiration, the Hmong silver classic headdress - cow horn hat abstractly extracted to get the edge curve, and then the curve gradually alienated into the form of flat top. From the side view still retains the curved profile of the bull's horn, so that it still has certain Hmong characteristics, while the flat-topped form is more in line with the modern urban street lamp modeling design trends. In the overall color selection, following the Hmong aesthetic thought, the main feature is the indigo extracted from plants, using the most typical Hmong dark blue and silver white, locking the overall color tone in high brightness in the purity of blue and white tones, with simple color matching carrying the flavor of Hmong culture.

Fig 5-fig 6 shows the cultural and creative lighting facilities program one, mainly used on both sides of the road as basic lighting facilities, this design abstractly changes the silver press collar in Hmong silver jewelry into the sensor part of the lamp, and the base of the lamp adopts the geometric pattern in batik as decoration. At the same time, indicator lights and cameras are added to the pole part to meet more possibilities in the function of street lights.



Fig 5. Scheme 1 design diagram



Fig 6. Scenarios for Scheme 1

Fig 7-Fig 8 shows the cultural and creative lighting facilities program II, which abstractly extracts the butterfly pattern from the Hmong batik and applies the extracted elements to the main part of the shell, so that the hollowed-out butterfly pattern part will show a dreamy effect when illuminated at night. The light is mainly used in residential areas, squares, parks, sidewalks, to meet the lighting needs at the same time, can be matched with the surrounding greenery to present a natural and harmonious atmosphere effect, but also as part of the environment decoration.



Fig 7. Scheme 2 design diagram



Fig 8. Scenarios for Scheme 2

Fig 9 - Fig 10 for the cultural and creative lighting facilities program three, the main part of the program with a more modern sense of styling design, making it more light, compact and lovely than the program two shape. Its main use in the street plant landscape lighting applications.



Fig 9. Scenarios for Scheme 3



Fig 10. Scenarios for Scheme 3

4. Conclusion

While technological civilization is advancing at a rapid pace, tradition and classics should not be forgotten. This topic takes the cultural elements of the Hmong people in Guizhou and the application of design elements as the object of research. Through the collection and analysis of a large amount of literature and excellent cases,

the semantic analysis method of product semantics is used to analyze the semantics of modeling, material semantics and color semantics of the representative elements of the Hmong people. It summarizes the principles and methods of extracting cultural elements applicable to regional ethnic minorities, and applies the method in practice to abstract and refine the existing representative cultural elements, and designs a series of cultural and creative lighting facilities in line with the characteristics of the Hmong ethnic group in Guizhou, providing new design ideas for cultural heritage protection and regional cultural and creative design.

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