

Architectural Features of Ancestral Temples in the Three Gorges Area of Chongqing, China

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To cite this article:

Yuhua Zhu, Xiaoke Nie. Architectural Features of Ancestral Temples in the Three Gorges Area of Chongqing, China. *International Journal of Architecture, Arts and Applications*. Vol. 8, No. 3, 2022, pp. 100-105. doi: 10.11648/j.ijaaa.20220803.11

Received: June 21, 2022; **Accepted:** July 6, 2022; **Published:** July 20, 2022

Abstract: The Three Gorges area of the Yangtze River is famous for its unique natural landscape and a large number of ancestral temple buildings. The traditional ancestral temple architectures have also become an important historical witness of the traditional culture of the Three Gorges of the Yangtze River. For example, the famous Shibao-zhai Castle in Zhong County, General ZhangFei temple in Yunyang County, Baidi Castle in Fengjie County, etc. are typical representatives of this kind of architecture. These temples are not only different from each other in appearance, but also unique in architectural form, which reflects the close relationship with the unique Three Gorges environment. In terms of construction technology, their wooden structure system retains some characteristics of China's oldest wood-construction technology. The flexible column-and-tie construction system ("chuan-dou style") can adapt to the complex geographical environment along Three Gorges area and can be built; In terms of decoration style, the ancestral temple in the Three Gorges area reflects distinctly regional culture and religious traditions, especially in terms of roof decoration and door decoration, which is full of Chinese history and mythological stories. This paper adopts the method of field investigation to investigate and study the ancestral temple buildings in the Three Gorges Area in Southwest China, and summarizes their important architectural features. Through the investigation of architectural methods, the article believes that the ancestral temple buildings in the Three Gorges area are of great significance for the study of the early origin of Chinese wooden structures. In terms of architectural decoration, it is of great significance to study the local folk customs and beliefs of the Three Gorges in Southwest China.

Keywords: The Three Gorges, The Ancestral Temples, Folk Architecture, Folk Custom

1. Introduction

The Three Gorges scenic area starts from Chongqing in the West and Yichang in Hubei Province in the East. There are a large number of canyons along the River, with beautiful scenery and numerous cultural relics. With hundreds of millions of years of natural geological changes and thousands of years of human civilization accumulation, the Three Gorges has become a geographical and cultural concept with unique natural and cultural landscape, which is world-famous. In this context, a large number of exquisite ancient buildings along the Yangtze River are the witness of human history and culture in the Three Gorges area. Among them, the ancestral temple buildings more intensively express the local human emotions and religious beliefs. Its construction method, spatial layout, construction

technology, material application and decoration theme all reflect the unique local cultural connotation. With the development of Three Gorges tourism, famous architectural and cultural scenic spots such as Fengdu Ghost Town, Shibao-Zhai castle in Zhongxian County, ZhangFei temple in Yunyang County and Baidi castle in Fengjie County have long been well-known all over the country. Many of them are also listed as municipal important cultural property or national important cultural property. However, at present, the research on the architecture and landscape of these ancestral temples still stays in the introduction of tourist attractions. This paper tries to study the construction characteristics of ancestral temple buildings in the Three Gorges area from the perspective of architectural history and art. At the same time, it also provides some reference and discussion for the protection of cultural heritage in the Three Gorges area.

2. Unique Background of the Three Gorges Region

A large number of landscapes in the Three Gorges, whether architectural complexes, ancient villages, stone inscriptions, or canyon landscape. All rely on the unique Three Gorges of the Yangtze River. This uniqueness can be summed up in two aspects: one is the special geological landscape conditions along the Yangtze River; the other is the long accumulation of human history and culture in this area.

200 million years ago, the Three Gorges region was a vast ocean and experienced three large-scale geological orogenic movements. The most recent one was the Himalayan orogeny. This geological movement caused the Three Gorges of the Yangtze River to the west of the Huangling Mountains in Hubei Province and the entire western China to rise strongly and substantially, and to uplift in a large area. The eastern region is relatively down. This results in the entire terrain of the Chinese mainland being high in the west and low in the east. The ancient Yangtze River, which originally flowed from east to west in this area, has undergone a huge change in direction. Due to the severe erosion and incision of the river, the West Yangtze River finally cut off the Daba Mountains and Wushan Mountains on the east side, and it connected with the East Yangtze River from the beginning and the end to form a complete river, flowing from west to east into the sea, forming the real Yangtze River seen today [1]. Due to the strong erosion of the mountains, karstification and the continuous downward incision of the river, the two sides of the Yangtze River are full of strange peaks and ravines, and there are many wide valleys and canyons, forming a magnificent and colorful landform, the most famous of which is the Three Gorges. Residents in the Three Gorges area also rely on the mountains to live near the water, building living quarters and forming a unique mountain architectural landscape. The ancestral temple building, as a place for residents to worship, more concentratedly reflects this delicate combination with landscape and architecture. (Figure 1).



Figure 1. The Three Gorges of Yangtze River (photographed by Jia).

The current archaeological excavations have proved that the Three Gorges region is one of the important birthplaces of Chinese civilization [2]. Historically, Bashu was an important state in Southwest China, with beautiful mountains and rivers and abundant products. Traveling by boat along the Three Gorges of the Yangtze River is the only way to the central plain of China (Hubei Province and Henan Province). Du Fu, a great poet in Chinese history, wrote: "I cross the Wu Gorge

from Ba Gorge, and then go down to Xiangyang City toward Luoyang City", clearly reflecting the route from Sichuan Province to the Central Plains of China. The Three Gorges area has been a military battlefield since ancient times, and there have been three planned mass migrations in Chinese history since the Qin and Han dynasties¹. Wars and immigration promoted cultural exchanges and economic development among ethnic groups [3]. It is precisely because of its unique geographical environment and its status as a major transportation route that the Three Gorges has become a historical center of Chinese cultural geography. Many major historical events have occurred here, and many heroic figures and myths and legends have been passed down from generation to generation here for thousands of years. The rich ancestral temple buildings in the Three Gorges area fully reflect this multi-ethnic cultural influence and become an important historical monument and cultural heritage.

3. Construction Technologies of Ancestral Temple in the Three Gorges Region

Starting from Chongqing and going down the river, it passes Fengdu Ghost Town, Shibao-Zhai Castle, General ZhangFei Temple and Baidi Castle. They are four important ancestral temple buildings and famous scenic spots in the Three Gorges of the Yangtze River in Chongqing. The history of the four cultural heritages can originate from the Han Dynasty in China, 2000 years ago, but most of the existing ancient buildings were built in the Ming Dynasty or the Qing Dynasty, 200-500 years ago, and the building types belong to local religions or ancestral halls Kind of temple. Most of the building structures adopt wooden structure and brick-wooden mixed structure. The large wooden structure mostly adopts the common "chuan-dou style" structure (column-and-tie construction system) in southern Chinese architecture [4]. Various decorations and statues are covered on the tile surface of the roof and under the eaves, with bright colors and various themes. Whether from the perspective of architectural research or the needs of the Three Gorges heritage protection, it is very necessary to study these architectural techniques and decorative styles with regional and religious characteristics.



Figure 2. Shibao-zhai Castle in Zhongxian County (photographed by Zhu Yuhua).

¹ The three major immigrants occurred in the Qin Dynasty, the early Ming Dynasty and the early Qing Dynasty.

4. Unique Heritage Environment

The ancestral temple buildings of the Three Gorges have strong mountain characteristics, and the buildings are closely combined with the environment to form the unique landscape. The terrain of the Three Gorges area is very steep due to the mountains on both sides. Temple buildings often make full use of steep mountains, carefully select sites, use layered ramming platforms with different elevations, and use various methods such as overhead and cantilever to build space, so as to realize the ingenious combination of architecture and environment. Some combination effects even achieve a kind of "although artificial, just like pure natural" landscape [5]. Shibao-Zhai castle in Zhongxian County is built on the cliff of Yuyin Mountain on the side of the Yangtze River. Yuyin Mountain is a lonely peak on the side of the river. It rises from the ground near the river. Its four walls are cut like a jade seal. It is a natural wonder in itself, but there are multiple roofs on its walls, overlapping and climbing up the cliff. All the buildings adopt the "chuan-dou style" structure, which is directly built on the steep concave convex original mountain. The indoor wooden ladder is rolled up, forming a 12 storey architectural spectacle up to 56 meters high. The combination of architecture and environment is so close and ingenious that it is unimaginable that this kind of architecture can be relocated or copied elsewhere (Figure 2). General ZhangFei temple was originally located on the opposite bank of Yunyang old city, near the foot of Feifeng Mountain. The terrain of Feifeng Mountain is steep, and there are waterfalls and flowing springs at the foot of the mountain. General ZhangFei temple is built beside the spring. It is surrounded by vines and ancient trees. The environment is quiet, and the mountain temple is ancient and simple. It is lined with each other. It has been known as "the first landscape in Bashu area" since ancient times [6]. The value of the building is inseparable from its historical environment. The key to the overall relocation of ZhangFei general temple in 2003 is how to rebuild the same original environment [7].

5. Flexibility of Architectural Space

Chinese traditional ancient buildings have a clear orientation, most of which face south, and the entrance is located on the south side. Chinese ancient architectural complex has a clear hierarchical order, and the arrangement and layout mostly adopts central axis symmetry and clear order [8]. However, the ancestral temple buildings in the Three Gorges area do not pursue a fixed orientation. The spatial planning often follows the trend of the mountain and adapts to the mountain environment. The architectural space is also arranged freely and flexibly in the design. According to the topographic changes, the courtyards and houses with different scales and shapes are organized together to form a rich and changeable internal space, which is highly integrated with the external natural environment. The architectural complex does not pursue the obvious central axis, but connects the architectural space naturally through the route design. The most important buildings are not highlighted by volume specifications, but by

preventing them from being at the highest point of the whole natural environment. For example, the main building of ZhangFei Temple is the Main Hall dedicated to ZhangFei, but the scale of the main hall is no higher and larger than the Jieyi building and Cuckoo pavilion in the building complex. The status and importance of the main hall is reflected by its position at the highest place in the whole environment [9]. Similarly, the emperor's Hall in Fengdu ghost town and the Ming Liang hall in Baidi Castle can be seen suddenly only by climbing up the long steps along the mountain road and slowly climbing to the top of the mountain after a winding route design. If there is a flat land on the top of the mountain, the buildings can often arrange a short axis, but it is often weak in the overall historical environment because of the narrow mountain. Therefore, the internal space of ancestral temple buildings in the Three Gorges area is often small. Buildings of different sizes and courtyards of different shapes are organized and connected with each other. In interior design, exquisite wood carved doors and windows are often used to divide the internal space, with good ventilation and pleasant scenery.

6. Special Technology with Chinese Classical Style and Regional Characteristics

From the perspective of construction technology, the ancestral temple buildings in the Three Gorges area are very similar to the folk houses in southern China during the Ming and Qing Dynasties, but there are few special studies at present. Generally speaking, the ancestral temple architecture in the Three Gorges area belongs to the small style of Chinese ancient architecture, and has obvious classical style and regional characteristics in construction technology.

6.1. The Timber Structure Adopts Column-and-Tie Construction Design in a Modest Style

Due to its good integrity, column-and-tie construction system ("chuan-dou style") widely applied in folk and ancestral temples and shrines in southern China [10]. Compared with ancestral temples and shrines in the southern regions of China, such as Jiangsu, Zhejiang and Anhui province, penetrating tie-beam construction practices in ancestral temples and shrines in the Three Gorges region are more primitive and modest. The column and tie-beam roof frame in folk and ancestral temples and shrines in southern China are usually rigorously constructed and gloriously carved, for example, the end of the vertical squat queen post on the penetrating tie-beam is mostly carved into swag, the two-rafter beam of the front eave or even the interior beam is made into a crescent beam, and the face of the penetrating tie-beam is carved with molding patterns, whereas the whole roof frame of ancestral temples and shrines in the Three Gorges region features nearly no embellishments and is made through mutual penetration and conjunction of cylinders and flat tie-beams and uniformly covered with dark coatings, quaint, generous with a strong sense of integrity. In addition, the main palace in the ancestral temples and shrines in

southern China mostly uses lifting beams and penetrating tie-beams, that is, column-and-tie construction is applied in two roofs and post-and-lintel construction in indoor structure, but post-and-lintel construction practice is not found in ancestral temples and shrines in the Three Gorges region and the way to avoid excessively dense columns is erect a squat queen post on the tie-beam, but after the span of the tie-beam is increased, the section is not flat anymore and becomes wider and thicker, like beam sections, and roughly viewed, like post-and-lintel construction, and from the point of view of force, this kind of column-and-tie construction that is similar to post-and-lintel construction seems to be more reasonable. Furthermore, in column-and-tie construction, the purlin is supported by the column, so it is possible to change the form of the roof by adjusting the height of the column. It means this construction is very suitable to the characteristics of mountains and allows for staggered roofs, enriching architectural styles (Figure 3).

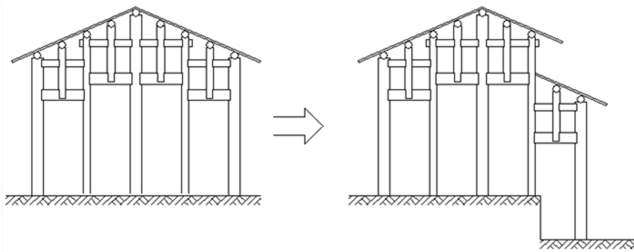


Figure 3. Column-and-tie timber system ("chuan-dou style") can be flexibly adaptive to terrains (Source: Zhuyuhua plotted).

6.2. Roofing Construction Practice

For most buildings in ancestral temples and shrines in the Three Gorges region, the roof uses simple tiling without lime cushion for most residential houses, with only important buildings adopting glazed roofs. Its construction practice comes with unique local characteristics. Normally, the square rafter (plate-shaped rafter) is laid on the purlin. With a flat section, it is as thick as the floor slab and its size is about 120mm*40mm (h). On the square rafter, no roof sheathing with tiles is done, but a layer of bottom bricks are laid first. The bottom tiles are docked to each other instead of overlapping each other, and laid into a flat bottom face, with the bottom of the tiles uniformly whitewash, and viewing from inside the building through the beam frame, the roof is simple but elegant, highlighting the entire dark beam frame. This practice can be called "First round of watching tile" [11]. (Figure 4).



Figure 4. Watching tiles of the Baidi castle (photographed by Zhu Yuhua).

On the Bottom-gray tile, concavely upward-facing tiles are placed along the gutter, with seventy percent of each tile concealed and thirty percent exposed. On the concavely upward-facing tiles, tubular tiles are laid. There are two types of tubular tiles, one is glazed tubular tiles and the other is gray tubular tiles. Interestingly, the four ancestral temples and shrines along the Three Gorge of the Yangtze river almost all use glazed roofing, which only uses glazed tubular tiles, with Chinese-grey tile still used as a plate tile, and it is diverting that the way it looks is so different from a real glazed roof. Moreover, the glazed tubular tiles vary in size, with various colors, rendering the glazed roofing variegated, which obviously is a result of previous repairs and replacements and also be a symbol of local religion (Figure 5).

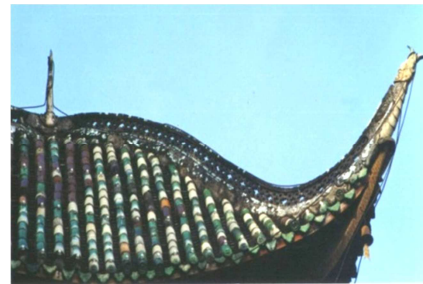


Figure 5. The colorful roof of ZhanFei Temple (photographed by Zhu Yuhua).

For example, for ZhangFei Temple, the history of variegated glazes began after the temple was renovated after the ninth year of the Tongzhi reign era². So did the Baidi castle. According to the investigation by the author [9], it is a custom for local people to donate glaze for renovation of temples and shrines. Probably, variegated, glazed roofs reflect an aesthetic interest of local people instead of their original appearance when they were initially constructed, but they are sufficiently old, their original state is hard to accurately investigate and verify, which gives us a new subject of how to do protection and maintenance work nowadays.

The ending of the roof at the eave also comes with local technologic features. In ancestral temples and shrines in the Three Gorges region, whether for simple tile roofing or for glazed tile roofing, there are ending treatments at the mouth of the eave. This is the difference between the ancestral temples and shrines and residential houses. There are two types of endings for glazed roofs: one is with eave tiles and drip-pendant tiles, i.e. glazed eave-end tiles and drip-pendant tiles using Chinese-grey tile, e.g. the Cuckoo pavilion in ZhangFei Temple, and the other is with drip-pendant tiles and without eave-end tiles, i.e. having drip-pendant tiles that use Chinese-grey tile but having no glazed eave-end tiles, which means that the end of the tubular tile at the mouth of the eave only needs to be blocked with limes and then glazed, the examples include the interior eave of the temple gate in the Baidi Castle and the gate in Fengdu Ghost town.

There are three types of endings for Chinese-style simple

² Yunyang County annals contain "nine years of Tongzhi, Dashui Temple"; The earliest existing building of zhangfei temple is the main hall rebuilt in the 11th year of Tongzhi, as evidenced by the inscription at the bottom of the beam.

tile roofing: one is with complete drip-pendant tiles using Chinese-grey tile, the examples include Guanyun pavilion in Zhang Fei Temple; one is that the overturned tile at the mouth of the eave is upturned, with a piece of wedge-shaped lime mud applied inside and the external end side smeared to be fan-shaped; simple but elegant and gorgeous, the examples include Tuogu Hall in the Baidi Castle, and another is that mortars are used to shape eave-end tiles and drip-pendant tiles with various shapes to block the mouth of the tile directly, rough, simple and unadorned, the examples include the Cliff-climbing Pavilion in Shibao-Zhai castle.



Figure 6. Front Dougong timber in the Baidi Castle (up) and Dougong of Han dynasty (down) (photographed by Zhu Yuhua).

The extended eaves in the buildings all use overhanging tie-beams. The practice of overhanging eaves can be seen in the grave goods of the Han dynasty and overhanging tie-beams are intensively used in the residential architecture of southern China. The extended eaves in Ancestral temples and shrines in the Three Gorges region come with their own characteristics: the overhanging tie-beam usually protrudes out of the principal column, passes through the eave column and then overhangs by about one pace (horizontal spacing between purlins), with the overhanging eave purlin supported on the corbel-out. Some overhangs are too big, so the beam hanger is placed under the overhanging tie-beam. It is a diagonal member located between the overhanging tie-beam and the eave column to jointly form a stable support structure. To eliminate the sense of force on the beam hanger and the diagonal member visually, it is normally wood carving members. In addition, to increase the surface of support of the eave column for the cross tie-beam (frontal tie-beam), the overhanging tie-beam is also used under the cross tie-beam to penetrate the eave column in a parallel manner, the squat queen post is erected on the corbel-out on both sides so that the two squat queen posts and the column head of the eave column jointly support the cross tie-beam. This practice is very similar to “Yidou Sansheng” (a simplified bracket set using on capital block, one short bracket and three blocks to support the beam) in the pottery house of the Han dynasty and remains to be carefully examined (Figure 6).



Figure 7. Sculpture art of the main gate of the Baidi Castle, Fengjie (photographed by Zhu Yuhua).

6.3. Plaster-Molding Is Intensively Used, with Rich Decorations and Local Characteristics

Plaster-molding are often used in residential houses in southern China. In ancestral temples and shrines in the Three Gorges region, rich stucco relief models can be seen everywhere. They are lively, extensive in contents and colorful. These models are especially concentrated on the roof and the temple gate and really unforgettable (Figure 7). Plaster-molding is the process of using stuccoes manually to shape meticulous and lively figures, animals, insects and fishes, flowers and birds and other models and patterns, which can be made on site or pre-fabricated and then installed. For large models, bamboo strips and iron wires are used to make a frame interiorly and stuccoes are used to shape models exteriorly, which requires superb workmanship. The stucco relief models in the Three Gorges region mainly focus on fishes and dragons, followed by flowers, grasses and figures, with their surface decorated with colorful oil paints, making the whole roof and temple gate gorgeous. The roof ridge of the building is sometimes made into a hollow-carved decorated ridge (now mostly made by fitting fired floral tiles together). In addition, the roof ridges and stuccos reliefs of the ancestral temples and shrines in the Three Gorges region intensively use embedded porcelains, that is, the fragments of blue and white porcelains are used to form various patterns to be embedded into the surface of the roof ridge and the stucco relief, providing protective and decorative effects. This porcelain embedding practice is often seen in the resident houses in the coastal regions such as Guangdong and Fujian, basically the same as those in the Three Gorges region and only different regionally in style and content [12]. In ancestral temples and shrines in the Three Gorges Region, decorations are ubiquitous from the stucco reliefs on the roof to decorative painting on the top of the wall under the eave and from the wood carving of the beam hanger to the stone carving of the column base and the handrail, well-constructed and extensive in contents, with strong characteristics of folk customs. In terms of color, they use chocolate, cyanic and khaki models and black or white finishing, in a bold and vivid manner. The examples include the gate tower “Ascending along the ladder cloud” in Shibao-Zhai castle, Zhong County. The whole gate uses khaki color as a basic color, garnished by chocolate and cyanic colors, providing a strong feeling of folk customs. The temple gate of the Baidi castle is power white color-dominated, with chocolate and cyanic stucco relief models widespread on it, so it looks

gorgeous, simple but elegant. The roof is decorated with stucco relief models, which are concentrated on the roof ridge and the wings. In the buildings in the Three Gorges region, the style with the body of a fish and the head of a dragon in which the dragon keeps the ridge in its mouth and the fish tail cocks is common on the wings and looks very cute, and it is also seen on the stone carving (Figure 8). The stucco reliefs (also called Yaohua or Middle Strut) on the ridges in the Baidi castle are all based on the stories from the Romance of the Three Kingdoms. In wood carving decorations, carving focus on the beam hanger under the eave, in addition to doors and windows. Overall, it is basically the same as more residential houses in southern China in terms of the section of the decoration and materials, but with more regionally fork custom characteristics in approaches.



Figure 8. Decorations of the roof of Shibao-zhai Castle (photographed by Zhu Yuhua).

7. Conclusion

Ancestral temples and shrines in the Three Gorges region are located in beautiful Three Gorges and have been hit by historical and humanistic events, so their cultural influences go far beyond people's exploration of their buildings. People often ignore the carrier of those cultures-the characteristics of the buildings while appreciating the culture of the Ghost town in Fengdu, the culture of the Three Kingdoms in ZhangFei Temple and poetic culture in the Baidi castle. In fact, The Chuan-Yu region is one of the regions where traditional practices in the buildings in our country are well preserved. Folk, the timber structure in the ancestral temples and shrines in the Three Gorges region is simple and reasonable with a modest style and probably get closer to the most primitive practice, so it is of great significance for the evolution of timber structure systems in our country. At the same

time, the mountainous characteristics of spatial layout and folk custom features of decorations in their buildings deserve our further research and summarization.

Disclosure Statement

The authors declare no conflict of interest.

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