

# Review of the Relocation of General Zhang Fei's Temple in View of the Three Gorges Dam Project

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**Abstract:** As a national cultural property, General Zhang Fei's Temple is the largest ancient architectural complex in the Three Gorges of the Yangtze River. It was built in the Han Dynasty and has a long history of nearly 2,000 years. In 1994, the Chinese government launched the Three Gorges Dam project at the Yangtze River and implemented the largest relocation project for the General Zhang Fei Temple to prevent it from being submerged. The temple was relocated 32 kilometers upstream along with the local people of Yunyang County, and the historic environment was rebuilt on the opposite side of the migrant city of New Yunyang County. The temple was restored successfully and the tradition of offering sacrifices to General Zhang Fei continued in the local community. The relocation project lasted for 8 years and became the largest cultural heritage conservation project of the People's Republic of China at the end of the 20th century. This paper comprehensively summarizes and reviews the project goals, implementation process, and project highlights of this relocation, so as to provide an important case reference for heritage conservation projects in the future.

**Keywords:** General Zhang Fei's Temple; Relocation project; Three Gorges Dam project; Heritage conservation

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## 1. Introduction

Located in Yunyang County, Chongqing City of China, General Zhang Fei's Temple was built to commemorate General Zhang Fei, a famous general in the Three Kingdom Warring period in the late Han Dynasty, and its history can be traced back to nearly 2000 years ago<sup>[1]</sup>. The temple has risen and fallen several times in China's long history<sup>[2]</sup>. The existing General Zhang Fei's Temple was rebuilt in the Qing Dynasty, with a total construction area of more than 2400 m<sup>2</sup>. There are still many ancient buildings in the Zhang Fei Temple Complex, including the Jieyi Building, the Wangyunxuan Building, the Cuckoo Pavilion, the Zhufeng Pavilion, the Main Hall, and dozens of big and small courtyards. They are backed by steep mountains, facing the surging Yangtze River, which separates them from the local communities of Yunyang County across the river. Part of the local tradition is to cross the river to worship the general, which has been practiced for thousands of years<sup>[3]</sup>. With its magnificent natural scenery and unique cultural connotation, General Zhang Fei's Temple has become an important national cultural property and tourist attraction of the Three Gorges along the Yangtze River (**Figure 1**).



**Figure 1.** General Zhang Fei Temple in the original site. Source: photographed by Yuhua Zhu

In 1994, the Chinese government launched the Three Gorges Dam project at the Yangtze River <sup>[4]</sup> and implemented the largest relocation project for the temple to prevent it from being submerged. The temple was moved 32 kilometers upstream along the river with the local people, to the opposite side of the migrant city of New Yunyang County, and the historic environment around the old temple was rebuilt. The temple was restored successfully and the tradition of offering sacrifices to General Zhang Fei continued in the local community. The relocation project lasted for 8 years and became the largest cultural heritage conservation project of the People's Republic of China at the end of the 20th century <sup>[5]</sup>.

General Zhang Fei Temple, as a national cultural property, had to be relocated due to the Three Gorges Dam project. The goal of the relocation is divided into three aspects. The first aspect was to completely restore the temple and preserve its historical information and heritage value (both tangible and intangible). The second aspect was to effectively repair the damaged parts of the temple, and the damaged components should be repaired using their original material <sup>[6]</sup>. Thirdly, the most important challenge was to recreate the historical environment and style of the original site as much as possible on the new site. In short, the relocation project was not only about dismantling, repairing, and reconstructing ancient wooden structures but also a recreation of the historical landscape of the Three Gorges region of the Yangtze River. The project was not only centered around preserving the authenticity and heritage value of the building but also the continuation of the local people's spiritual beliefs and traditions (**Figure 2**).



**Figure 2.** The relocation of Zhang Fei's temple and the locals of Yunyang County. Source: plotted by Yuhua Zhu

## 2. Stages of the relocation project

The relocation of General Zhang Fei's Temple was the most important cultural heritage preservation project under the background of China's major dam projects in the 1990s. In this sense, it is very similar to the international rescue campaign for the Egyptian Nubian human cultural heritage carried out by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in the 1960s due to the construction of the Aswan Dam project in Egypt<sup>[7]</sup>. The relocation of General Zhang Fei's Temple began in 1994 and was completed in 2003. It took 8 years and was carried out in several stages<sup>[8]</sup>.

- (1) On December 14, 1994, after decades of strict demonstrations, the Chinese government launched the Three Gorges Dam project officially. General Zhang Fei's Temple, as a national cultural heritage, which was located on the steep hill banks near the Yangtze River in Yunyang County, would have been at risk of being submerged.
- (2) On-site investigations were performed from 1995 through 1996. In 1995, Professor Lv Zhou of the School of Architecture, Tsinghua University organized a team to conduct a comprehensive investigation of General Zhang Fei's Temple. This investigation involved surveying and mapping all the ancient buildings, recording the damage of each building in the temple, and drawing a series of completely detailed drawings of ancient buildings.
- (3) Relocation plans were designed and revised between 1997 and 1999. There were different opinions in China on how to prevent the temple from being submerged. Ultimately, three relocation schemes were presented, in which the collective opinions of the local people in Yunyang County played a decisive role in the scheme employed. The Chinese government decided to relocate the temple to the New Yunyang County along with the local people. the temple's relocation preserves its historical spatial connection with Yunyang County on the opposite bank of the Yangtze River.
- (4) The planning and design took place from 2000 to 2001. In 2000, Professor Lv Zhou and Zhu Yuhua of the School of Architecture of Tsinghua University prepared the overall relocation plan for the temple. At the end of 2001, Zhu organized and completed all the construction drawings for the relocation of the temple, including building restoration and historical environment reconstruction.
- (5) The project was executed from 2002 to 2003. In the middle of 2002, The Chongqing Municipal Engineering Department dismantled the temple and transported the components to the new site 32 kilometers away for repair and assembly. At the same time, the steep hill terrain of the original site was reconstructed at the new site, the landscape plants were replanted, and the entire historical environment was reconstructed. The project was completed after 9 months.

## 3. The temple's history

As a popular historical figure among the Chinese, General Zhang Fei was a famous general during the Three Kingdoms period at the end of the Han Dynasty. Like General Guan Yu, General Zhang Fei was also a heroic symbol of loyalty to the country and has been respected and admired by the Chinese people for thousands of years. According to historical legends, General Zhang Fei's head was buried in Yunyang County, Chongqing City. Therefore, General Zhang Fei's Temple in Yunyang County has become one of the most important places for folk sacrifices.

In the temple, there is the earliest inscription on a stone tablet of the Song Dynasty, which records that the General Zhang Fei Temple was built on the bank of the Yangtze River more than 1,000 years ago. The local people worshipped the general there day and night, even to this day. According to local chronicles, the temple had been engulfed by floods many times in history and has been rebuilt on the original site many times by the



## 4.2. Historical environmental value

- (1) Natural environment: The natural landscape of the Three Gorges region of the Yangtze River is world-famous for its turbulent river water and steep mountains on both sides. General Zhang Fei's Temple was situated at the riverside, like a landscape painting amidst the forests [11].
- (2) Significance of the cultural context: General Zhang Fei is a famous patriotic hero in Chinese history and a god who blesses the local people. Since the Song Dynasty, people have been crossing the river to worship General Zhang Fei. The County and the temple on the opposite sides of the river constitute the lives and the spiritual beliefs of the locals.

## 5. Relocation concerns and innovations

### 5.1. Application of international heritage conservation principles

The relocation of monuments is an important way to protect cultural heritage, especially when the original setting of the monument cannot be preserved. The relocation of General Zhang Fei Temple was a heritage conservation project. Based on the principle of “authenticity protection” [12], the temple was dismantled with careful numbering and reused after repair. The reconstruction emphasized the reuse of as many original components as possible, ensuring the preservation of authentic historical information embedded in the ancient structure to the maximum extent. For components that had been completely damaged, they were replaced by new components made with the original material, taking into account the application of the principles of “identifiability” and “artistic integrity” throughout the overall process.

### 5.2. Respect for traditional structures and local techniques

General Zhang Fei's Temple is located in the Three Gorges area of the Yangtze River. It is a folk temple with many local characteristics and is assembled with wooden structures. Its ingenious structural systems have never been seen elsewhere in China. During its relocation, many local craftsmen and artists were employed to reconstruct the temple [13].

#### (1) Case 1

The roof structure of the Jieyi Tower in General Zhang Fei's Temple is very unique. There are curved roofs similar to the helmet of an ancient general on all sides, and the four corners of the roof are raised upwards. No one knows exactly how the wooden structure inside the roof was assembled, so before disassembling the roof, local craftsmen were specially invited for on-site guidance, and the disassembling process of the roof structure was recorded in detail. The helmet-shaped roof consists of four ridges made of four fish-shaped wooden members, with curved purlins in the middle. The engineering staff quickly learned how to assemble this special roof and successfully restored it at the new site (**Figure 4**).

#### (2) Case 2

There are many fish and dragon sculptures on the four corners of the roof of the Cuckoo Pavilion in General Zhang Fei's Temple. The dragon's mouth is connected to the roof ridge, and the fishtail is raised upwards, presenting a vivid and beautiful shape. These artworks were recreated by local craftsmen with lime, grass, and mud. The artistic effects depend entirely on the skill of the craftsmen. Bamboo strips were used to make the skeletons and the surface was covered with traditional materials such as lime and grass.



**Figure 4.** The helmet-shaped roof structure. Source: photographed by Yuhua Zhu

### 5.3. Innovation of protection methods on value interpretation

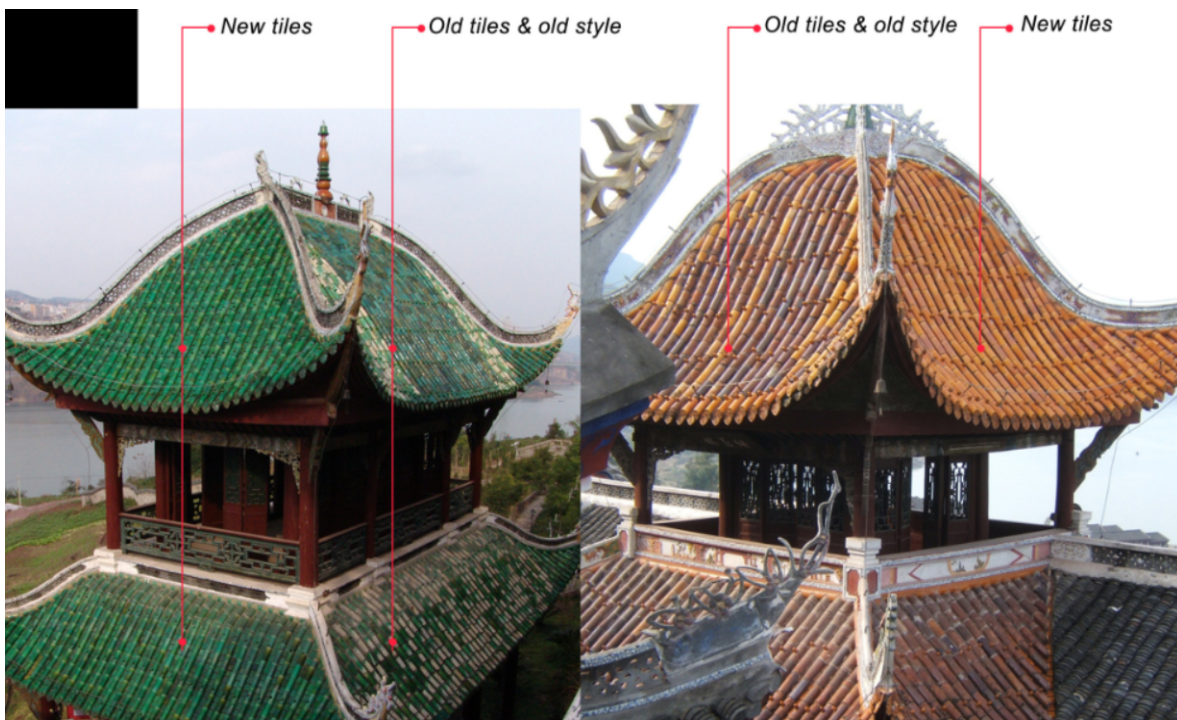
The relocation of General Zhang Fei's Temple involved a variety of protection methods. Conservation goals were determined according to the heritage value, prompting engineers to adopt innovative conservation methods. For example, when some glazed tiles on the roof are missing, many new tiles need to be added. The innovative aspect of the procedure then lies in how new and old tiles were integrated during the restoration. Additionally, given the relatively flat terrain of the new site, the challenge was to recreate the same steep terrain as the original location. The use of new reinforced concrete to reconstruct the old terrain exemplifies an innovative approach to conservation technology. These innovations underscore distinct interpretations in the restoration process.

#### (1) Case 1

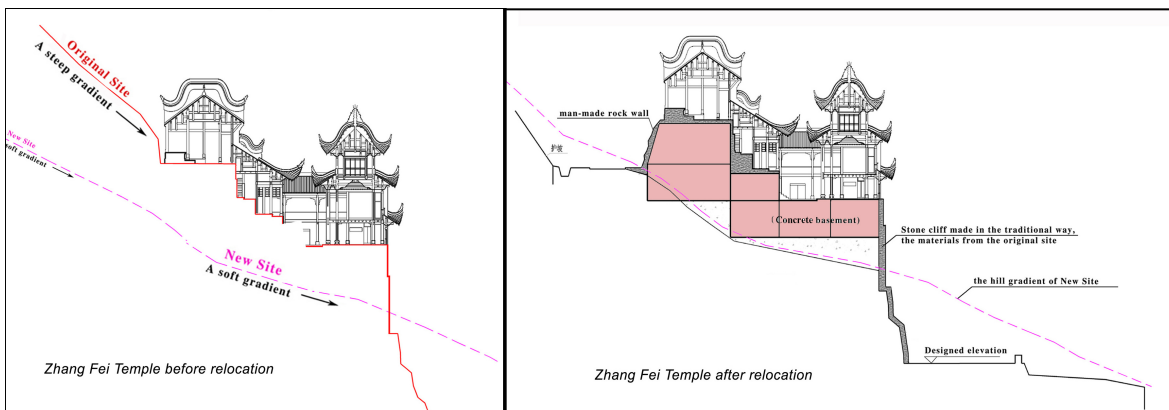
The roof of General Zhang Fei's Temple was originally composed of glazed tiles of different colors. However, due to the use of cement-bonded tile surfaces in the past, most of the old tiles cannot be reused. Given that the number of old tiles was insufficient, a large number of new tiles were added in the restoration process. Heritage protection requires the use of old tiles as much as possible, and local people prefer to see a brand-new temple after repair. Therefore, the restoration engineers decided to use new tiles on all three sides of the roof facing the Yangtze River. The back of the roof facing the mountain was covered with old tiles that had been repaired according to its original appearance, so as to show visitors the original roof features of the temple (**Figure 5**).

#### (2) Case 2

After deliberations on three relocation proposals, the Chinese government opted to relocate General Zhang Fei's Temple, along with the local residents, to New Yunyang County (the old Yunyang County had been submerged), situated 32 kilometers away. The relocation aimed to maintain the temple's



**Figure 5.** New tiles were used on three sides of the roof facing the river, while old tiles were used at the behind part. Source: photographed by Yuhua Zhu



**Figure 6.** The terrain reconstruction project after relocation. Source: plotted by Yuhua Zhu

original historical and spatial relationship with the county while preserving the local traditions <sup>[14]</sup>. However, the new site did not have the steep terrain as the original site. Therefore, the engineers imitated the original terrain by constructing a two-story basement using reinforced concrete <sup>[15]</sup>. The basement space will be used as General Zhang Fei’s museum in the future. Many other modern construction technologies were also used in the construction of this terrain (**Figure 6**)

#### 5.4. Material selection

An interesting discovery is that during the disassembly of the temple, a large number of Han Dynasty bricks were found on the back wall of the Main Hall, with each piece having exquisite patterns. These building materials

were not the original components of the temple but were added during the repair of the temple. After a discussion among experts and engineers, it was decided each brick would be photographed and numbered to preserve the historical information. After recording the necessary information, the brick walls were rebuilt according to their original form. After the walls were masoned, the photos were filed in the project archives (**Figure 7**).



**Figure 7.** Bricks from the Han Dynasty in the walls. Source: photographed by Yuhua Zhu

Similarly, the lime plastering layer on the wall surface was also made with local traditional material. Impurities in the clay were removed by sieving, and it was washed, dried, and ground into fine powder. The powder was then mixed with lime and stirred into a white paste. Dried shrub stems and leaves were then added to the paste and stirred. The mixture was then applied onto the surface of the brick wall three times, creating a milky white façade. This material was used during the restoration.

## **5.5. Structural reinforcement and space adjustment**

### **(1) Case 1**

Most of the ancient buildings in General Zhang Fei's Temple have enclosing brick walls. After hundreds of years, the strength of these tall brick walls has generally decreased, making them unsafe for use. During the dismantling of the temple, many old bricks were found broken. From a heritage protection standpoint, the utilization of weakened old bricks in the relocation and restoration process is necessary. However, ensuring the safety and stability of the restored wall posed a challenge. To address this, engineers implemented structural reinforcement during the reconstruction. The method involved adding reinforced concrete structural columns every 3 meters along the wall and increasing the reinforcement mesh between brick layers to enhance mutual support. This approach preserved the original building materials while improving the structural strength and stability of the walls.

### **(2) Case 2**

Before the relocation, General Zhang Fei's Temple faced environmental challenges. The structure was significantly damaged, and erroneous additions of partition walls in later years disrupted the original spatial arrangement. As early as 1997, the research team from Tsinghua University's School of Architecture initiated a comprehensive study, collecting information on the historical layout and evolution of the entire temple. This research revealed the spatial configuration and room functions during the temple's most complete historical period. With the relocation and restoration of the temple, the interior space was fully restored in the late Qing Dynasty, the added walls were removed, all the spaces in the temple facing the Yangtze River landscape were opened, and the sightseeing spots from the temple to the Yangtze River and the ancient town on the opposite bank were restored successfully <sup>[15]</sup>.



## 6. Results and impact

The relocation of General Zhang Fei's temple stands as a significant heritage conservation event for ancient buildings in China at the close of the last century. It represents the most extensive relocation of cultural relics in conjunction with the Three Gorges Dam project on the Yangtze River. Its importance is almost equal to that of the relocation of Abu Simbel temple in the 1960s during the construction of the Aswan Dam project in Egypt, which had garnered much attention from the Chinese society. After the completion of the project, China did not actively publicize the restoration of the Three Gorges. Therefore, this important relocation did not exert a corresponding influence internationally. Based on our extensive review, there are three impacts of the relocation of General Zhang Fei's Temple from the perspective of heritage protection.

### 6.1. The application of the socialist system in heritage conservation

For an extended period, China operated under the socialist system, characterized by state distribution practices. The Three Gorges Dam project represents a pioneering initiative, marking the first attempt into adopting the socialist system within the framework of a market economy to undertake national dam construction <sup>[16]</sup>. As a national cultural property, the relocation of General Zhang Fei's Temple marks the inaugural instance in China where professional engineering companies were entrusted to execute a heritage conservation project through public bidding for societal participation. Numerous engineering firms engaged in and assumed responsibility for three essential aspects of the project: the restoration of the wooden structure, the construction of the basement, and the historical setting. This development has significantly propelled the advancement of China's cultural heritage protection projects toward a more professional and market-oriented trajectory.

### 6.2. Contribution to the protection of heritage setting

The relocation of General Zhang Fei's Temple is not just about moving ancient buildings but also about recreating the original landscape at the new site. In 1997, experts emphasized the importance of preserving the authentic location and cultural context. This process aims to consider the profound value embedded in the temple's heritage setting, ensuring authenticity not only in the physical site but also in its cultural significance. In the end, General Zhang Fei's Temple was moved along with the local people of Yunyang County. The project emphasized not only preserving historical traditions and cultural ties but also restoring a similar natural environment at the new location. Consequently, the reconstruction of the historical environment played a crucial role in the successful implementation of this relocation (**Figure 8**).



**Figure 8.** Keep the historic spatial relationship between the Temple and Town after relocation. Source: plotted by Yuhua Zhu

### 6.3. Contribution to the inheritance of local beliefs.

The ultimate relocation plan for General Zhang Fei's Temple undeniably reflects the traditional Chinese approach to heritage conservation. In this perspective, the goal is to preserve heritage for the benefit of the local community and its people, prioritizing their needs over external considerations. Despite the significant investment and the decision to move the temple to a new site 32 kilometers away for extensive reconstruction, it is not accurate to assert that China lacks an understanding of international heritage conservation principles or is senselessly expending substantial resources. In fact, the whole relocation project was dominated by the opinions of the local people in Yunyang County, because General Zhang Fei's was a real hero and he is worshipped by the local people. When the relocation was completed, a grand ceremony and parade was held in Yunyang County. Since the completion of the project in 2003, the local people still held on to the tradition of crossing the Yangtze River to worship General Zhang Fei on his birthday. This is perhaps the most significant outcome of this great relocation that heritage experts and engineers have seen (Figure 9).



Figure 9. The locals worshipping General Zhang Fei on his birthday at the new site. Source: photographed by Yuhua Zhu

### Disclosure statement

The authors declare no conflict of interest.

### References

- [1] Wen W, (ed) 1985, Sichuan Landscape, Sichuan People's Publishing House, Chengdu.
- [2] Editorial Committee of Yunyang County Chronicles, (eds) 1999, Yunyang County Chronicles, Sichuan People's Publishing House.
- [3] Lv Z, 2006, Invite General Zhang Fei to be an "Immigrant" and Discuss Some Issues of Cultural Relics Protection. China Three Gorges Construction, 2006(02): 80–83.

- [4] Xiong K, 2010, The Whole Decision-Making Process of the Three Gorges Project. *Dang Shi Wen Yuan*, 2010(19): 4–9.
- [5] Li H, 2004, Zhang Fei Temple Relocation and Protection Project. *Chinese Cultural Heritage*, 2004(03): 102.
- [6] Feilden BM, 2003, *Conservation of Historic Buildings*, Architectural Press, Amsterdam, Boston.
- [7] Fekri AH, 2007, *The Aswan High Dam and the International Rescue Nubia Campaign*: Springer Science + Business Media. *Afr Archaeol Rev*, 24: 73–94.
- [8] Zhu Y, 2004, *Research on the Protection of Zhang Fei Temple Relocation Project in Chongqing*, thesis, Tsinghua University.
- [9] Sun H, 2008, A Brief Study of Zhang Huanhou Temple in Yunyang, Chongqing — Also on the Gains and Losses of Zhang Huanhou Temple’s Relocation and Protection. *Yangtze River Civilization*, 2008(2): 8–19.
- [10] Lv Z, 1993, *Demonstration on The Protection of Cultural Relics in the Submerged Area of the Three Gorges of the Yangtze River — The Protection Demonstration of Zhanghuanhou Temple in Yunyang*, Archives of the School of Architecture, Tsinghua University.
- [11] Shu Q, Chen H, 2010, *Research on the Protection of Ground Cultural Relics in the Three Gorges Reservoir Area*. *People’s Yangtze River*, 2010(23): 83–86.
- [12] ICOMOS, n.d., *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter 1964)*, [https://www.icomos.org/images/DOCUMENTS/Charters/venice\\_e.pdf](https://www.icomos.org/images/DOCUMENTS/Charters/venice_e.pdf)
- [13] Shaanxi Provincial Institute of Ancient Architecture Design. *The Planning and Design of The New Relocation Site of Sanzhang Huanhou Temple in Yunyang County 1999*.
- [14] Hao G, 2006, *Review of the Three Gorges Cultural Relics Protection*. *Outlook News Weekly*, 2006(5): 60–63.
- [15] Architectural Design and Research Institute of Tsinghua University, School of Architecture, Tsinghua University. *Design of Zhang “Feimiao Relocation and Protection Planning Scheme”*. Beijing: Archives Office, School of Architecture, Tsinghua University, 1999.
- [16] Liang F, 2009, *Review of Cultural Relics Protection in the Three Gorges Reservoir Area of the Yangtze River and Follow-up Protection Countermeasures*. *Journal of Chongqing Three Gorges University*, 2009(06): 1–5.

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