

Research on China's the Oldest Wooden Building Structure in the Tang Dynasty-the Restoration Model of the Main Hall of Nanchan Temple, Re-Understanding the Value of Heritage

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Abstract: China has a long five thousand years of cultural history. There is much precious architectural heritage have been preserved, and during the most prosperous period of the Tang Dynasty, there are only two wooden structures of the Tang Dynasty that have been preserved. They are the Main Hall of Nanchan Temple and the Main Hall of Foguang Temple in Wutai Mountain, Shanxi Province, China. This paper is based on the Main Hall of Nanchan Temple, which was established more than 1,200 years ago, as the research object. By referring to the restoration report in 19801, the 1/10 scale large wooden structure model of the Main Hall of Nanchan Temple was made for the first time; the Main Hall of Nanchan Temple drawings and 3D renderings was systematically drawn. Secondly, this paper analyses and interprets the three criteria for identifying the value of the heritage, combined with the status of Chinese heritage protection, and from the perspective of the authenticity and integrity of the heritage, combined with the two restoration fortifications of the Main Hall of Nanchan Temple, and systematically carried out. After sorting out, summed up constructive opinions suitable for the protection of Chinese heritage, to better highlight the universal value of heritage.

1. Introduction

The Main Hall of Nanchan Temple is the oldest Tang-style relic in China. It has a history of more than 1,200 years. The earliest existing wooden structure in China is located in Lijia Zhuang, 22 kilometers southwest of Wutai Mountain, Shanxi Province. It is one of the important discoveries in the survey of cultural relics in Shanxi Province in 1953. The date of its original construction is unknown, and it was rebuilt in the third year of Jianzhong Tang (782). After many repairs during the Song, Ming, and Qing Dynasties, the Xingtai earthquake after 1966 was rescued. In 1972, it was approved by the State Council for restorative repairs. Construction began in 1974 and was completed in August 1975. Restored the far-reaching appearance of Tang-style palace buildings¹.



Fig.1 A photo of the front facade of the Main Hall of Nanchan Temple

This photo was taken after restoration in 1975, and the style of doors and windows at this time was completely different from before. (The picture from Baidu).

According to the document “Songshi·Wuxing Zhi”, there have been many earthquakes in history. For the first time, in 1037, the Taiyuan and Xinzhou earthquakes occurred at the same time in Shanxi. Xinzhou was the most serious, with 19,742 dead and 5,655 injured. In the second earthquake, according to the “Sonshi·Lijing Zhuan”, the Dingxian and Xinzhou generation earthquakes caused the city walls to collapse, overwhelming the houses of residents, and ten thousand of people died. The most recent earthquake was after the Xingtai earthquake in 1966. The bricks in the east of the main hall collapsed, and the overall building structure tilted to the southeast (20-60 cm to the east and 30-35 cm to the south)¹. The building components were severely split, but not damaged.

Therefore, it is sufficient to show that the structure of the Main Hall of Nanchan Temple Hall has strong seismic performance. We have to admire that the ancient Chinese craftsmen have taken into account the mechanical properties of the building when constructing the temple, so that it can be preserved for a longer period of time.

Through the collection of literature, the research on the Main Hall of Nanchan Temple is as follows: Japanese scholar Nobuo Ito published an article “Important Ancient Buildings Published in New China” in *Architectural Magazine* in 1969, and the Main Hall of Nanchan Temple was mentioned, and Attached are the drawings before the restoration of Nanchan Temple Hall in 1975, which records in detail the style of the doors and windows of the Main Hall of Nanchan Temple before the change²; in 1980, in the “Cultural Relics” magazine, “The Main Hall of Nanchan Temple Restoration” published by Qi Yingtao and Chai Zejun. This article belongs to the category of restoration reports. It explains in detail the three parts of the status before restoration, the restoration status of the main hall, and the main technical measures. This report is the main basic data for the production of the Main Hall of Nanchan Temple model and the writing of the paper. However, there is no detailed record of the specific construction of the bucket arch and the specific drawings of other components¹. In 1981, Chai Zejun published the “Technical Report on the Renovation of the Main Hall of Nanchan Temple” in the “Conservation Technology of Cultural Relics”. The main aspects of wooden components were explained. The conclusion part pointed out that there was a lack of research on the building structure of the Tang Dynasty at that time³; in 1985, Qi Yingtao published an article “Maintenance of Ancient Buildings” in “Techniques of Ancient Architecture and Gardens”, south of the paper Taking the restoration of the Main Hall of Nanchan Temple as an example, the method for determining the principle of cultural relics restoration is proposed, combined with Article 11 of the “Interim Regulations on the Administration of Cultural Relics Protection” promulgated by the State Council in 1961: Ancient buildings and memorial buildings and other cultural relics protection units shall, It is necessary to strictly abide by the principle of restoring the original state or preserving the status quo, and for the first time to put forward the understanding and understanding of “authenticity” and “value” for heritage protection, and not to

destroy the original value of the building for blind repair; “An analysis of the construction time of the Main Hall of Nanchan Temple in Wutai Mountain” was published, which made a detailed historical research on the construction time of the Main Hall of Nanchan Temple, and put forward at the end of the article: To the architectural heritage of the Main Hall of Nanchan Temple, publicly published information incompleteness, leading to inaccurate reference information for architectural history research, and hope that the relevant state departments will formulate a mandatory ancient building surveying and maintenance engineering report compilation and disclosure system⁴; in 2018, Cha Qun published “Chinese Cultural Heritage” Early protection practice of Chinese cultural heritage (1) A comparative study on the two restoration plans of the Main Hall of Nanchan Temple “, through the “Preliminary Draft of Nanchan Temple Hall Restoration Plan” written by Qi Yingtao, who was collected by the China Cultural Heritage Research Institute from 1953 to 1954, and Qi Yingtao and Chai Zejun’s “Nanchan Temple Main Hall Restoration” content comparison criticized the concept of heritage protection: Qi Yingtao’s 1954 restoration draft, based on the Song Dynasty’s construction methods and contemporary architectural examples, proposed “restoration”. “Tang system” repair concept, and Liu Zhiping’s reply to the “repair draft” is the repair concept of “maintain the status quo”, and put forward the proposition of “not sure enough, don’t easily destroy the original status of the building”, this is the same as 1994 In the “Nara Authenticity Document”, the emphasis on the authenticity of the heritage is to minimize the damage to the heritage caused by human intervention. There are still very few systematic studies on the architectural structure of Nanchan Temple and the architectural structure of the Tang Dynasty in China⁵.

The Main Hall of Nanchan Temple was overhauled in 1974, the length of the Nanchan Temple rafters and the style of doors and windows were changed: the arch voucher became a rectangle; the dwarf pillars on the flat beams were also removed.

Besides, during the major repair of the famous Toshodai Temple in Japan, to strengthen the building structure, the roof ceiling structure was changed, and the slope of the roof became steeper. The salient features of the architecture of the Tang Dynasty: the roof slope is gentle and stable. Through two examples of heritage restoration, the measures at that time were indeed to repair and protect the architectural heritage, but now from the perspective of heritage protection, whether the heritage is truly protected. Therefore, this thesis takes this as an opportunity to combine the current cases of heritage protection and restoration, on heritage restoration

When restoring, whether to follow to highlight the “universal value” and “authenticity” of the heritage, and the “integrity” of the heritage. When the original state of the heritage changes, and at this time whether the heritage has the value attribute of the heritage, this thesis conducts an in-depth discussion and puts forward constructive opinions on the protection of the Chinese heritage.

The protection of heritage, it must be linked to its value. Early heritage protection was mostly for collection, with the worship of theology; the symbol of status; and the pursuit of aesthetics. Nowadays, heritage protection is to better preserve and continue the architectural heritage.

For heritage, what kind of heritage has the value of protection? Not all monuments left behind are valuable. This article focuses on the study of the three rules of the evaluation of inheritance, and finally returns to the universal value of the inheritance.

2. The Architectural Structure of the Main Hall of Nanchan Temple and Its Features Before Restoration

There are no pillars in the Main Hall of Nanchan Temple, and no ceiling is completely exposed. The two long four-rafters are horizontally framed on the front and rear eaves columns, and the stilts are turned on the back to reach the front and rear eaves. Then they are Tuo Feng, Dado, Ling Gong, Cheng Ping Beam. The two ends of the flat beam support the Zhu Jiao, on which the spine is

supported by the large crossed hands, without Tuofeng and ZhuRu-Column. This structure is an ancient system during the Han and Tang Dynasties, and has disappeared after the Five Dynasties. (Figure2)

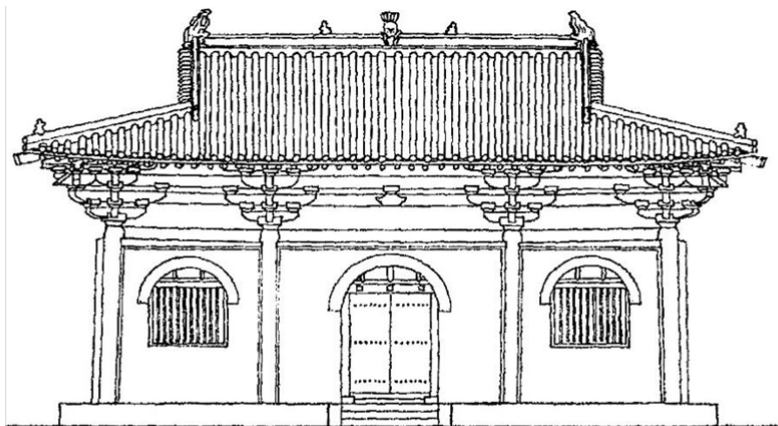


Fig.2 The Elevation of the Main Hall of Nanchan Temple Before Restoration. the Picture from Ito Nobuo, Sawamura Ni, Sekiguchi Kinya²(1969).

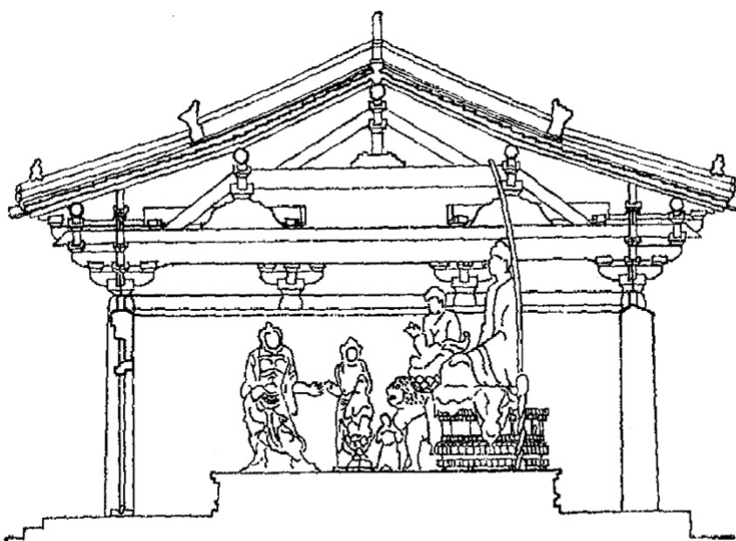


Fig.3 The Section View of the Main Hall of Nanchan Temple Before Restoration. the Picture from Ito Nobuo, Sawamura Ni, Sekiguchi Kinya²(1969).

Ding Fu is used for the two mountains of the beam and the frame, and only a tie is set at the corner to support the intersection point of the rafter and the flat, supported by the Zhi Dou, The Liang Fu style are all Yue-Liang. The eaves pillars support the eaves, and there is no intervening paving, and the ancient system still exists. The Zhu Tou is made of five Pu-Zuo that is the Shuangchao Dougong Touxin Zao. In the second Tiao, the Hua Gong is made by stretching out the four rafters outside the eaves. The backs are stretched out under the eaves and chopped to make

Shua Tou. They are used to replace the wooden and eaves with the Ling Gong (Figure 3).

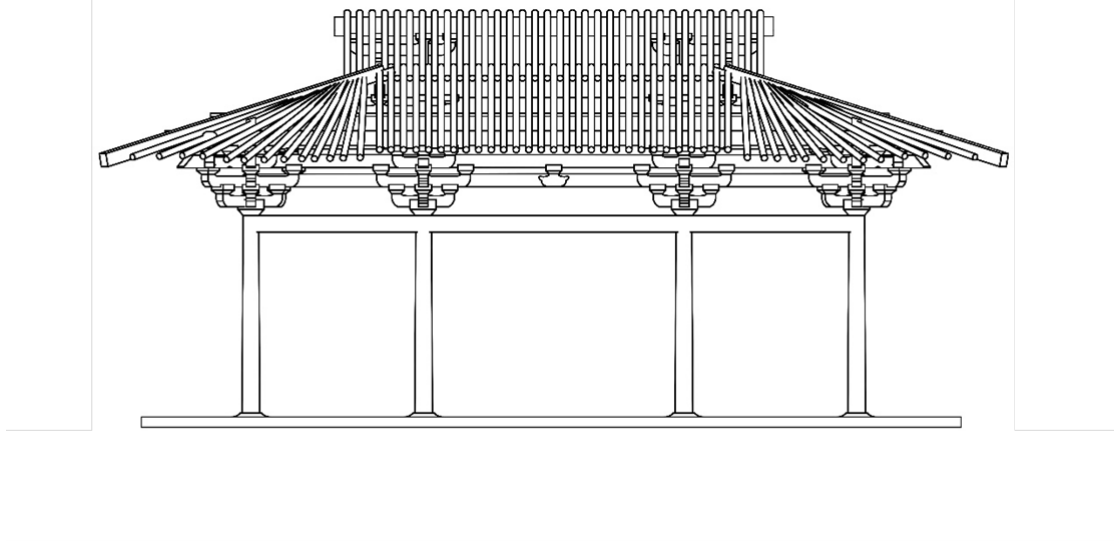


Fig.4 The Elevation of the Main Hall of Nanchan Temple after Restoration. (Picture Source, Drawn by the Author).

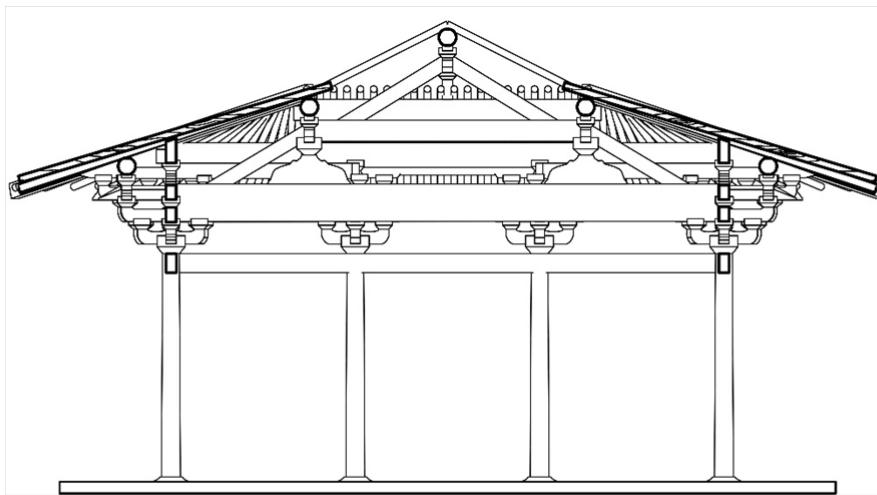


Fig.5 The section view of the Main Hall of Nanchan Temple after restoration. (Picture source, drawn by the author).

Fig.5 The Section View of the Main Hall of Nanchan Temple after Restoration. (Picture Source, Drawn by the Author).

The Dou Gong on both sides of the building is the outer end of Ding Fu. A 45-degree oblique angle is applied at the corner to make the angle into a Yuan-yang Ling Gong. Above the Zhu Tou is Ni-Dao Gong, the Zhu Tou is stacked on two layers, the lower layer is concealed with Ni-Dao Man Gong, the upper layer is set with a Tuo Feng, and Min Ban and San Dou are pressure-bearing troughs. Each scroll is divided into five petals, and each petal is slightly tilted inward. This style has been seen on the eaves of the grottoes in the Qi and Sui Dynasty and on the tomb sculptures. It is the only example in the real building. It can be seen from the picture that the shape of the early building is completely different from that in Figure 1. The length of the roof rafters and the style of doors and windows have all changed. However, in the early restoration, there are still insufficient

grasps of the original state of the building and the authenticity of the heritage⁶.

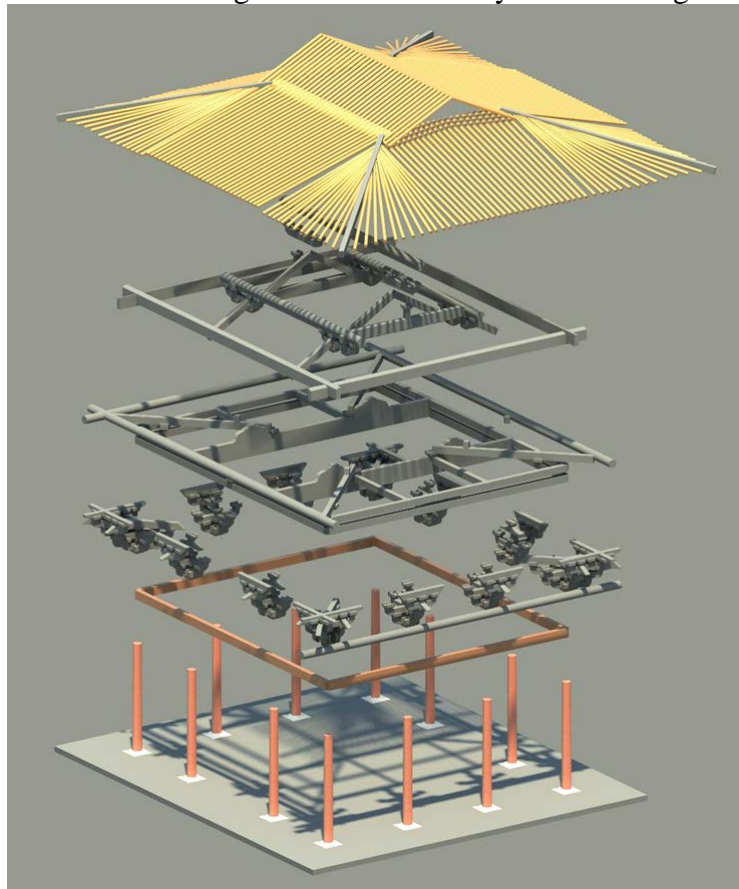


Fig.6 Disassembled 3d Model of the Main Hall of Nanchan Temple after Restoration. (Picture Source, Drawn by the Author).

3. The Main Hall of Nanchan Temple Making Drawings and Model Making

The Main Hall of Nanchan Temple plane, substantially similar to a square, actually there are three columns square column, and the remaining 9 are circular pillars. According to the 1980 restoration report that three square columns are the most primitive state of construction. (Figure.6)

It can be seen from Fig.2 and Fig.4 that the rafters on the roof of the Main Hall of Nanchan Temple are longer than before the restoration.

Qi Yingtao scholars believe that the Main Hall of Nanchan Temple belongs to the Tang Dynasty, and the length of the rafters can just cover the part of the foundation, and will not be wet by the rain. Further inference: each dynasty saw it cut off during repairs. So, it was restored in 1975 when it was restored. That is the status quo now.

From the comparison of Fig.3 and Fig. 5, it can be seen that Zhu-Ru column above the Ping-Liang is different. It was removed when it was restored in 1975. The author believes that the restoration at that time did not take into account the value and authenticity of the heritage, which is different from the current concept of heritage protection and appraisal.

4. Authenticity

Authenticity, the English interpretation of “authenticity”, is the first rule for evaluating heritage. It is also a crucial factor. For the evaluation and appraisal of heritage, authenticity is an explanation

and explanation on a level. It does not specifically refer to a small part of the heritage, but its meaning covers the field of cultural and natural heritage. Authenticity refers to the connection between the attributes of the heritage and the outstanding universal value. Given the true expression, the value of the heritage can be fully reflected. For heritage, it is necessary to judge whether the outstanding universal value can represent its value characteristics. For example, the planning, architectural style, and traditional characteristics of a region can fully demonstrate the value characteristics.

In fact, in the “Nara Document”, guiding opinions are provided for assessing the authenticity of the heritage. The ability to understand the value of the heritage depends on the authenticity or credibility of the source of information on the value of the heritage. Regarding how to appraise the authenticity and credibility of heritage information, this also puts forward requirements and improvements for my country's cultural relics protection agencies and protection workers. In the “Nara Document”, as far as authenticity is concerned, the reconstruction of archaeological sites, historical buildings, and neighborhoods will only be considered in rare cases. Only according to the detailed and complete record, without any imaginary element in it, can it be accepted. In other words, respecting the original state is the best treatment for the authenticity of the heritage.

In combination with the restoration project of the Main Hall of Nanchan Temple in 1975, as can be seen from Figures 5 and 6, ZhuRu-Column on the Ping-Liang have been removed. The removal of the dwarf pillars and the changes in the style of doors and windows violated the most basic authenticity of the heritage. For the current heritage protection project, when there is no great certainty and technology, it is not easy to process the original state of the heritage⁸.

5. Integrity

Integrity, and “wholeness and intactness”. For heritage, it is “integrity”, “no imperfection” and “not threatened”. It is also a necessary attribute of heritage. Regardless of natural heritage and cultural heritage, they should have integrity.

Integrity is an important factor for the universal value of heritage. Integrity and authenticity exist mutually. The integrity of the heritage is to carry its outstanding universal value. The process and characteristics belong to the scope of the heritage. The heritage has experienced the changes of the times without substantial destruction and no change in value; if changes occur, it is not a substantive process. And features. The protection status of the heritage is intact, and its value has not changed.

Integrity is not a concept that exists in isolation, but rather a reference. Often “relative to the previous”, it has the characteristics of time. To judge the completeness, we must first see whether the constituent elements have changed. For a building group, the spatial location, overall layout, and group relationship have not changed, and it can be regarded as complete; for a single building, it is a large component, a base, and a large wood, which can completely present its original form. The decorative components, colors, and carvings do not pose a threat to the stability and safety of the building itself, which can be considered complete.

Nowadays, the restoration of the heritage, if the original condition is not taken into consideration, and the restoration is carried out, actually does not play a protective role. Before restoration, the integrity of the cultural relics should be fully understood. Only by understanding the original condition can the heritage be protected more objectively and scientifically. In the “Venice Charter” Article 5 says: “The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the layout or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted” emphasizes that the plane and decoration cannot be changed, whether, for protection or other purposes, this is the protection of the original

state and the integrity of the heritage the embodiment of attributes⁸.

6. Universality and Universal Value of Heritage Value

The “World Heritage Convention” recognizes “heritage sites with outstanding universal value”. They are part of the heritage of all mankind and are worth protecting and passing on to future generations. This is very important to the entire human society.

In the “Operation Guide”, “outstanding universal value” is defined as a rare cultural and natural value that transcends national boundaries and has universal significance for the present and future of all mankind. This definition needs to be understood through the selection criteria for inscription on the World Heritage List, which are discussed below.

The author believes that the potential heritage of universal value should be identified and defined. In the nomination stage of the heritage, it is necessary to fully explain whether the heritage has the potential outstanding universal value before it is included in the heritage list. This is the initial stage of the initial nomination stage, the specific work and filing process is as follows: In our country, it should have its system, and the identification and division of heritage should belong to its system. This is also a reference and application to our country's heritage protection.

Guidelines for the Protection of China's Cultural Relics and Historic Sites Established by the National Committee of China National Committee of Antiquities and Sites Council 2015.

The “Guidelines for the Protection of Chinese Cultural Relics”, which was recommended by the China Cultural Heritage Administration in 2000 and compiled by the China National Committee of the International Council of Monuments and Sites, the Getty Conservation Institute of the United States, and the Australian Heritage Committee, has been 20 years old⁷.

In the world cultural heritage declaration, protection, management, monitoring, research and other aspects gradually complete and effective working mechanism. More importantly, with the popularization of world heritage protection concepts that highlight the universal value, authenticity, and integrity of the heritage, as well as the development of the Silk Road and the Grand Canal giant linear heritage protection practice, the breadth of cultural heritage protection in China. The depth has been greatly expanded⁷.

Regarding the basic principles of cultural relics protection, the new version of the “China Guidelines” continues to adhere to the basic principles of cultural relics protection such as not changing the original state, minimal intervention, using appropriate protection technologies, and disaster prevention and mitigation, while further emphasizing authenticity, integrity, and cultural protection. Protection principles such as tradition truly reflect the rich and profound connotations of the basic principles of Chinese cultural heritage protection⁷.

7. Discussion and Conclusion

As to whether a heritage has outstanding universal value, certain conditions must be met before it can accurately define its attribute value. There is no point in talking about inheritance without the outstanding universality of inheritance. Ignoring the value attribute, is also a matter of paper for appraising the value of heritage.

The focus of the declaration and appraisal of the heritage is the study of its universal value, and the value and significance of the heritage at the local and national levels. This of course means that the understanding at this level must also be understood and recognized, that is, it reflects the characteristics of heritage diversity. Regarding the coordination and implementation of heritage protection, the understanding of local culture and customs is an important source of the collection of the value of heritage in the eyes of local people.

For our country, heritage protection puts forward the following three suggestions:

(1) Refine the classification of heritage, “cultural heritage” and “natural heritage”, and establish scientific preservation archives;

(2) Combining the national conditions of my country's cultural relics protection, create a cultural relics heritage value evaluation system suitable for my country's national conditions, the purpose of which is to highlight the universal value of the heritage.

(3) For Chinese citizens, the site of heritage and ancient building restoration will be opened to allow citizens to develop a good sense of heritage protection through on-site visits.

In summary, this research systematically sorted out the literature of the Main Hall of Nanchan Temple. For the first time, the author have made a research drawing of Nanchan Temple Hall. To fully understand the construction process of the Main Hall of Nanchan Temple, and have made rendering drawings of 3D dismantling model; the model takes 8 months to complete, the collection of documents and materials through various channels. Completed the construction of 1/10 model. (Figure.7 and Figure.8).



Fig.7 The Main Hall of Nanchan Temple Wooden Model Elevation. (Picture Source, Made by the Author).



Fig.8 A Three-Dimensional Perspective View of the Main Hall of Nanchan Temple. (Picture Source, Made by the Author).

This research is the first chapter of doctoral dissertation: Background of The Study, and the horizontal load experiment of the Main Hall of Nanchan temple will be discussed in the next paper.

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