

# The Research on the Evaluation and Optimization of the Traditional Dwelling Conservation Practice: A Case Study of Cheng Zhi Hall Restoration Project within Hongcun

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**Abstract:** Hongcun is the World Cultural Heritage which is a Traditional Village in China, and Cheng Zhi Hall is the most important traditional dwelling within Hongcun. In December 2010, Yi County Cultural Relics Bureau commissioned Anhui Provincial Cultural Relics Protection Center to complete the Restoration Plan of Cheng Zhi Hall, Hongcun Village, Yi County, Huangshan City, Anhui Province, and carried out the actual restoration project from 2015 to 2018. However, by the evaluation of the restoration plan and project of Cheng Zhi Hall, many problems are found such as that the description of restoration measures is rough, the restoration drawings are not clearly marked, and the restoration practices are lack of the theoretical support and so on. Therefore, the aim of this research is to sort out the existing problems, and through the comparative study of the relevant Italian cases, putting forward the optimization strategies of the plan and practice of traditional dwelling conservation practice in China.

**Key words:** Traditional Dwelling; Conservation Practice; Cheng Zhi Hall; Hongcun; Optimization Strategies

**Publication date:** July, 2020

**Publication online:** 31 July, 2020

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## 1 Introduction

Hongcun is a traditional village in Yi County, Southern Anhui Province, China, which was established in 1131 with a history of over 870 years. Hongcun has an area of 19.11 hectares. It lies at the foot of Lei Gang Hill, an aftermath of Huangshan Mountain. There is a 400-year-old water system in Hongcun, which runs through every household in the village and forms two ponds of different sizes in the middle and south of the village, as the Moon Pond and the South Lake (Nomination Document of Hongcun, 2000). The artificial water system, the particular model of the traditional dwellings, the appearance of the ancient pattern and the three kinds of carvings (Wood, Brick and Stone) make Hongcun outstanding in the Chinese vernacular heritages (Wang Shuangwu, 2001).

At present, there are still 110 traditional dwellings built during Ming Dynasty and Qing Dynasty are left, of which there are 106 Traditional Dwellings, 3 Ancestral Halls and 1 Traditional Academy (Conservation Planning of Hongcun, 2016). At the same time, according to the newest version of Hongcun's conservation planning, the traditional dwellings are classified as Buildings of Cultural Relics Level of 81 traditional dwellings and Historical Buildings of 29 traditional dwellings based on the preservation situation and the architectural and aesthetic value.

Actually, the actual intervention cases of the built heritages are more intuitively reflected with the differences and problems between safeguard policies and conservation practices (Xu Honggang, 2009). Therefore, this paper is selected with the Cheng Zhi Hall (承

志堂) as the case study, which is under restoration by the local government, to explore the actual situations of the conservation practices in Hongcun.

## 2 Identification of Case Study

Cheng Zhi Hall is the largest traditional dwelling within Hongcun, which was built in the 5th of reign of Emperor Xianfeng of Qing Dynasty (1855) and covers an area of 1639 m<sup>2</sup>. Both the front hall and the back hall bear the corridor structure of Two Floors and Three Rooms and are composed of a main hall, a study, a scripture hall, a pond, a garden, a kitchen and an ancient well. The whole dwelling consists of 28 rooms, which are magnificent and glittering with exquisite carvings, red columns and golden beams (Zhang Xinrong, 2013). Therefore, Cheng Zhi Hall is honored as Civil Forbidden City and used as the exhibition to the public (see Figure 1).



Figure 1. Interior Furnishings and Carvings of Cheng Zhi Hall.  
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In December 2010, Yi County Cultural Relics Bureau commissioned Anhui Provincial Cultural Relics Protection Center to complete the Restoration Plan of Cheng Zhi Hall, Hongcun Village, Yi County, Huangshan City, Anhui Province, and obtain the approval and the appropriation of the State Bureau of Cultural Relics. The restoration project began in February 2010 and finished in August 2016. The

restoration plan of Cheng Zhi Hall consists of six chapters, which respectively illustrates the Chapter 1 Restoration Instruction of Cheng Zhi Hall, Chapter 2 Photos of Current Status of Cheng Zhi Hall, Chapter 3 Survey Drawings of Cheng Zhi Hall, Chapter 4 Drawing of Restoration Plan of Cheng Zhi Hall, Chapter 5 Project Budget and Chapter 6 Insects and Ants Prevention of Cheng Zhi Hall, of which the first 4 chapters will be the focus of this paper.

## 3 Inspection to the Restoration Plan of Cheng Zhi Hall

The methodology for the inspection of the restoration plan of Cheng Zhi Hall is based on the strict examination of the contents of the plan and identifies the deficiencies. Moreover, every chapter will be analyzed according to the specific contents.

### 3.1 Chapter 1 Restoration Instruction

In the first chapter of the Restoration Plan, the Restoration Instruction introduces the geographical location, natural environment, historical evolution and previous restorations of Cheng Zhi Hall, then from the aspects of architectural form and characteristic, proposes a detailed description of the location, layout, structures, components and preservation status, and completes the Survey Table of Dwelling Decays. The restoration plan formulates the restoration principles:

*In strict accordance with the Law of Peoples Republic of China on Protection of Cultural Relics, Ordinance for the Conservation of Ancient Dwellings in Southern Anhui Province 1997 and the principles with common consensus in the domestic and foreign related heritage conservation, this Restoration Plan does not change the status quo of cultural relics, and does not take the unnecessary interventions. The components that indeed are needed to change should be identifiable. The reinforcement and maintenance of status quo should ensure the structural safety and curb the disease, which more important is as far as possible to preserve of the original historical information of traditional dwellings.*

Following the principle, the restoration plan proposes the detailed restoration instructions and the clear descriptions on the traditional practices of the architectural components of Hongcun dwellings, including Trinity Earth Ground, wall masonry, wall plaster, the constructive techniques of wooden component and so on. However, the contents are overly

superficial and simplistic (Zhou Hailong, Liu Fei, 2009), which the corresponding reinforcement measures are shown in the Table 1.

### 3.3 Chapter 3 Survey Drawings

The Chapter 3 is the Survey Drawings of Cheng

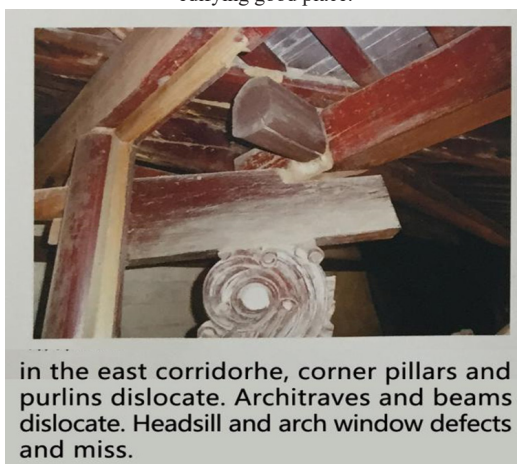
**Table 1.** Selected Examples: Restoration Instructions to Front Hall of Cheng Zhi Hall

Space	Component	Restoration	Reference
Front Hall	Wood Rafter	Replace the rotten 25% wood rafter.	Same size and material
	Wood Purlin	Inspecting, patching, inserting joints and replacing of 10 wood purlins.	Same pattern to existing component
	Wood Column	Inspecting, adjusting, Dun Jie23, inserting joints and banding protector.	Same pattern to existing component

### 3.2 Chapter 2 Photos of Decays

In the Chapter 2, the restoration plan provides substantial photos in total for 241 photos of the current situation of Cheng Zhi Hall. Not only including the wooden carvings, brick carvings, ceiling painting and other photos, more important contents are to provide the photos of decays of Cheng Zhi Hall, from the exterior wall, palanquin hall, front hall, back hall, study room, Tun Yun Xuan, Pai Shan Cabinet<sup>1</sup>, butler room, servant girl room and kitchen space, to present the photos of decays of various architectural components in these space as well as the short description (see Figure 2).

<sup>1</sup> Tun Yun Xuan as the name suggests is the place for family opium smoking in the ancient time. Pai Shan Cabinet is the place playing mahjong (because playing mahjong shuffle when the voice is like an avalanche). From this, the situation shows that the master in business after the rich pursuit of pleasure and extravagant life. The left side of the Tun Yun Xuan is the back garden of Cheng Zhi Hall, inside waterside pavilions, flowers and trees, is an edifying good place.



**Figure 2.** Photos of decays of Cheng Zhi Hall.

© Restoration Plan of Cheng Zhi Hall and translated by author

Zhi Hall, including the floor plans, elevations and sections of Cheng Zhi Hall, the plans and sections of the exterior wall, the palanquin hall, the front hall, the back hall, the study room, the Tun Yun Xuan, the Pai Shan Cabinet, the butler room, the servant girl room and the kitchen space, as well as the detail drawings of architectural components such as the details of the partition in the servant girl room or the details of the Fei Zhao in the study room. In the Chapter 3, there are a total of 85 survey drawings of Cheng Zhi Hall to have the fundamental survey data for the restoration plan of Cheng Zhi Hall.

### 3.4 Chapter 4 Restoration Measures

According to the survey drawings and the photos of present situation, the Chapter 4 of this restoration plan is drawn with the relevant restoration drawings and construction detail drawings, putting forward the corresponding restoration measures according to the specific problems of Cheng Zhi Hall, in which there is total of 50 detail drawings of Cheng Zhi Hall, marking the restoration measures on the corresponding drawing of the plans and sections. But as seen to these restoration drawings, the restoration measures listed are to general to conduct the actual restoration works, which means there is no special solution for how to restore the decay phenomena of different parts of Cheng Zhi Hall.

### 4 Actual Intervention Practices of Cheng Zhi Hall

Despite the restoration plan of Cheng Zhi Hall is detailed, but due to the deviations in understanding of



restoration principles and the limitations in technical cognition, the results of restoration project are not very satisfied and many restoration results are debatable. Especially in some practices of some wooden components, the restoration project replaces the new components directly, destroying the original architectural features of Cheng Zhi Hall.

For example, the Front Fei Zhao<sup>2</sup> of palanquin hall has been missing and is replaced with the newly made Front Fei Zhao. But also, the material is not under the strict selection which does not have the good compatibility with the original wooden components. Due to the newly front Fei Zhao of palanquin hall is the main architectural component of the Cheng Zhi Hall, causing the destruction of the architectural feature of Cheng Zhi Hall architectural style (see Figure 3).

2 Fei Zhao is one of the components of Chinese traditional architecture, usually wood or carved panels made by common hollow, embossed, engraved and other technique



**Figure 3.** The actual intervention of Front Fei Zhao (Above before restoration and below after restoration). ©Taking by author

## 5 Conclusion

Through the restoration project of Cheng Zhi Hall, it is able to be clear that although the government wishes to make the Cheng Zhi Hall into the better situation though its restoration project, but the reality of the restoration project is counterproductive. Although the restoration plan includes the description of the restoration instructions, the status photos, the survey drawings and the repair drawings of Chengzhi Hall, but the most important content the restoration instructions of all the building's components are only described in very general vague words such as Existing size, quality, shape and original practice, which is not with the practical instructions at all. At the same time, the principle of restoration plan is one-sidedly emphasizing the Identifiability of the Cheng Zhi Hall's restoration, while neglecting the understanding of Compatibility (Ruan Yuxiang, Li Xin, 2016). Due to the lack of the scientific standards of the restoration project, the Cheng Zhi Hall workers in the restoration process work on its own experience and methods, causing the restoration is unsatisfactory, but also destroyed the original features of the Cheng Zhi Hall. Therefore, the proper solution for the conservation of the traditional dwellings within Hongcun is through the scientific intervention measures to the actual interventions, then the built heritages of Hongcun could be conserved better in the near future (Wang Senqiang, 2003).

## Acknowledgements

I would like to extend my sincere gratitude to my supervisor, Maria Cristina Giambruno, for guiding my research. And also, high tribute is paid to prof. Minghao Zhang for supporting my research.

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