

Douba Zaojing and its Colored Paintings in the First Floor of the Timber Pagoda

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Abstract

Comprehensive studies were done on the wooden structure of the Timber Pagoda (1056 CE) of the Liao dynasty in northern China and the standard colored paintings based on *Yingzao Fashi*. Focusing on one single example of *douba zaojing* (octagonal domed coffered ceiling), this thesis makes an effort to combine the strengths of researches on both structure and ornamentation by treating the composition of the wooden members and the colored paintings on the *zaojing* as a whole, and employing the approaches of both architectural analysis and art historical studies.

The first intention of this thesis is to infer the patterns of colored paintings and their composition on the *zaojing* which have been repainted in modern times following the original contours. A painting of restoration is drawn by the author as a suggestion of the original appearance. This thesis further argues that the Liao design of *douba zaojing* is a reinvention based on three traditions: the Han tradition of *zaojing* in palace halls, the tent canopies from the Middle East and the umbrella canopies that started to be used in Buddhist art during the Southern and Northern dynasties. Through this reinvented *zaojing*, buddhist statues gain a stronger relation to the architectures housing them.

Key words: *douba zaojing*, colored paintings, original

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INTRODUCTION

Yingxian Timber Pagoda (應縣木塔) is formally called the Śākya Pagoda (釋迦塔) of the Fogong Monastery (佛宮寺). Rising at the height of 67 meters, it is the largest and oldest surviving pagoda in China constructed entirely of wood. During the Liao (遼) Dynasty (916-1125) when the pagoda was constructed, it was situated in the Ying prefecture, only 100 kilometers from the Western Capital (Xijing 西京, today's Datong 大同) of the Liao at the frontier territory facing the border of the Northern Song (北宋, hereafter Song) empire (960-1127). For the astonishing magnificence and constructional achievements of this pagoda, it is simply abbreviated as “*Muta*” (Timber Pagoda 木塔).

The pagoda is recorded as being constructed under the orders of Emperor Daozong (道宗, r.1055-1101) in 1056, but whether that year marks the beginning or the end of its construction is still up for debate. This question regarding the start date of the pagoda's construction is important, as it is related to discussions about patronage: though it is recorded as having been ordered by the Emperor Daozong, some scholars argue that it is highly possible that the Fogong Monastery and its timber pagoda was a family temple of the empress' family (houzu 后族), the Xiao (蕭) Family¹.

The Timber Pagoda is octagonal in plan, with five stories in appearance and four structural mezzanine levels between each of the main five floors (figs.1, 2, 3). The logic of the structure is

¹ There are several empress families from different branches under the family name of Xiao. Here this family is the Bali shi (拔里氏) with their ancestor named Xiao He (蕭和). See: Liaoning Sheng Wenwu Kaogu Yanjiusuo, *Guanshan Liao mu [Liao Tombs in Guanshan]* 關山遼墓. (Beijing: Wenwu Chubanshe, 2007).

the same as a formal wooden pavilion, only that in this case, five “halls” are stacked on top of each other. Each of the five main floors follow the same pattern of construction. At their core, there is an inner groove (*neicao* 內槽²) where sculptures of Buddhas and Bodhisattvas are placed. Moving away from the center, there is an outer groove (*waicao* 外槽), the middle ring where worshipping activities take place. The outermost ring is a balcony that circles the structure, supported by brackets from the mezzanine level and sits under the ring of the eaves. A post-beam structural system is used for the two rings of the inner groove and the outer groove, while the mezzanine levels serve as reinforcement for the columns. These columns and beams are connected by brackets, which vary in type according to where they are placed. In all, there are 54 different types of brackets used in the pagoda’s construction.³ Decorative ceiling boards and lattices cover both the *neicao* and the *waicao* of the first floor, also the *neicao* of the fifth floor, while no ceiling covers the other interior spaces, leaving the roughly hewn structural members exposed. Nevertheless, grooves can be found on the horizontal members supported by the interior parts of the brackets, suggesting that these stories were also designed to hold decorative ceilings, whose framing members would fit into the grooves.

In all the surviving Buddhist wooden halls under the Liao there is a dome-shaped octagonal *zaojing* (藻井) above the major statue(s), if the building is designed to have a decorative coffered ceiling. Apart from the Timber Pagoda, traceable *zaojing* examples in other wooden buildings

² These architectural members are named after the standard book *Yingzao Fashi* (营造法式) published under the Song. They may have different names under the Liao.

³ Structural achievements of this pagoda are analyzed by Mingda Chen in detail. See: Chen Mingda, *Yingxian Mu Ta [The timber pagoda of Ying County]* 應縣木塔. (Beijing: Wen Wu Chu Ban She, 1966).

under the Liao include the Avalokiteśvara Pavilion (Guanyinge) (984) of Dulesi in Jixian(薊縣獨樂寺觀音閣), the Bhagavat Sutra Repository (hereafter the Library Hall) (1038) of Lower Huayansi in Datong (大同下華嚴寺薄伽教藏殿), and the Pilu Hall (毗盧殿) and the Guanyin Hall (觀音殿) of Kaiyuansi in Yixian (易縣開元寺) (1105). The Avalokiteśvara Pavilion has a *zaojing* with triangular lattice above the head of the sixteen-meter colossal statue of Bodhisattva Avalokiteśvara. At the Library Hall, an unlatticed *zaojing* is installed above each of the heads of the Buddhas of Three Periods. The Pilu Hall and the Guanyin Hall were constructed after the publication of the standard book *Yingzao Fashi* of Song, and show different features from the earlier ones.

Among these *zaojing*, the one on the first floor of the Muta is unique. It covers the entire space of the inner groove of the first floor, reaching a span of 11 meters (fig.4). For such a long span, the *zaojing* itself is divided into two rings. Together with the radiating *yangma* (陽馬) ribs that extend in between the cardinal and intercardinal directions, the intersecting secondary beams (*suibanfang* 隨瓣枋), spanning between every two *yangma*, divide the *zaojing* into 16 sections. Every section is latticed, with four different patterns overall. Behind the lattices are boards that cover these structural members. The *zaojing* is painted overall, which might be described as the “five-colored system” (*wucaibianzhuang* 五彩徧裝), the highest level of colored paintings introduced in the book *Yingzao Fashi*. Together with the interior walls that frame six of the eight sides of the inner groove, the *zaojing* serves to frame this interior space, in which the largest statue of the Buddha Sakkyamuni is placed, with the other six paintings of Buddhas on the surrounding walls.

The colored paintings on the *zaojing* in Dulesi have faded away; those in the Lower Huayansi have been clumsily repainted, though they are still indicative of the types of patterns used. Fortunately, original paintings of the same system used in the Timber Pagoda have survived in one other piece of wooden architecture: the main hall (1020) (Daxiong dian, 大雄殿) of Fengguosi (奉國寺) in Yixian, Liaoning (遼寧義縣) (unfortunately the roof of this hall has been substituted by a new one). Among other Liao examples, the East Qing Mausoleum (慶東陵, 1032, 1058) is also significant to this study, as the *zaojing* and the colored paintings that imitate lattice work found on its ceilings have also survived. Like the Timber Pagoda, both the main hall of the Fengguosi and the Qing Mausoleum were royal structures under the Liao. Their surviving colored paintings are precious artifacts that help us understand the colored paintings on the *zaojing* in the first floor of the Timber Pagoda, as surviving comparable examples under the Liao are rare. To understand and restore the original paintings on the *zaojing* in the Timber Pagoda, examples from directly influencing dynasties need to be considered.

This thesis begins with a historiography of related existing scholarship in the first chapter. Since the rediscovery of the Timber Pagoda by Ito Chota in 1902, scholars have been discussing almost every aspect of it, from the stylistic and formal characteristics, the structural features, the constructional history to the religious purpose, the sculptures and patrons, etc. However, former studies of the pagoda have largely ignored ornamental architectural elements.

The Timber Pagoda went through four major repairs and reinforcements since its establishment.⁴ Judging from the current state of the *zaojing* on the first floor, its colored

⁴ For details, see: Meng Fanxing and Zhang Changgeng, “Yingxian Muta Weixiu Jiagu de Lishi Jingyan” [Experiences from the History of Repairs and Reinforcements of the Timber Pagoda in Ying County] 應縣木塔維修加固的歷史經驗, *Gujian Yuanlin Jishu* 2011 (4-73).

paintings have been clumsily retraced during one (perhaps more) of the past restorations .

Fortunately, we can still observe the patterns used on the *zaojing*. One may argue that the current paintings are entirely newly invented after other Liao examples, but this is not likely, as the patterns contain a lot of irregularities, which could easily happen when one is tracing blurry old lines without professional analysis, while newly configured patterns would be much regularized.

In light of existing scholarship, this thesis fundamentally seeks to understand the spatial, religious and aesthetic meanings of this *zaojing* by putting it in the broader architectural context of the pagoda as well as the historical context of the tradition of *zaojing*. To enable the understanding of this *zaojing* in itself, first the repainted patterns and their composition has to be closely read in order to gain a clearer whole picture of the design of this *zaojing*. The restoration of the colored paintings on the *zaojing* is the topic of the second chapter. First, a description of the current state of the colored paintings is given in the sequence generated by dividing the *zaojing* into architectonic members and then decomposing the paintings on the members into elemental patterns. Next, the original appearance of these paintings are inferred through analysis of related examples contemporary to the Liao Dynasty, together with the painting rules introduced in *Yingzao Fashi*.

The third chapter gives further analysis of the meanings of the *zaojing*. For the sake of its reading in the architectural context, historical problems such as the construction date and phases and the non-religious purposes of the pagoda will need to be considered in further detail. The solving of related construction chronological problems is meaningful: on one hand, it clarifies the chronological relationship between this *zaojing* and other related examples of Liao, which provides a better basis for comparative studies; on the other hand, discerning the original Liao

drawings from repaintings of later dynasties enables a better understanding of how the first floor of the Timber Pagoda was designed and how the pictorial elements are configured. This provides a basis for understanding the status and usage of the *zaojing* and its patterns in the architectural context, or, in other words, the arranged images and decorations for the representation of a heavenly space revolving around the major image of the first floor, the colossal statue of the Buddha Sakyamuni in the lotus posture. Since there are few academic materials available on the use of *zaojing* in wooden architecture during the Liao and the Song periods, the reading on their historical context includes wider range of sources, including those on tombs and grottoes. Among these materials, the most abundant is writing on the Buddhist cave temples of former dynasties, and the Mogao Grottoes carved during the Tang (唐, 618-907), which are the most closely related to the Timber Pagoda, apart from contemporary wooden buildings. Due to the scarcity of contemporary examples under the Liao, this historical reading may be blurry. Nevertheless, this discussion will be helpful in understanding the origin, development and variations of the Liao, as well as the relationships among the *zaojing* in Tang, Liao and Song dynasties. Furthermore, these understandings enable deeper interpretations on the reasons and purposes for using this specific form in the Timber Pagoda.

BRIEF HISTORIOGRAPHY OF EXISTING SCHOLARSHIP

Architectural Colored Paintings

As the introduction indicates, surviving examples of high-ranked architectural colored paintings from or before the Song and the Liao Dynasties are rare. Moreover, architectural colored paintings from these early periods have often been ignored in previous academic studies. This is due to several reasons: first, early modern scholarship on premodern Chinese architecture has been deeply influenced by the theories in modern architecture, which regard ornamentation as degrading and hence the focus of discussion is on structure; second, art historians and archaeologists who have studied these examples were more attracted by the sculptures and mural paintings; third, the Liao examples are from an empire of conquest established by the ethnic minorities of the Qidan (契丹), most of who's written legacies have failed to survive until now.⁵

Nevertheless, by the end of the twentieth century, several studies on this subject have been done, starting from interpretations of the volume on colored paintings in the official standard book *Treatise on Constructional Methods* (*Yingzao Fashi* 營造法式, hereafter *YZFS*) under the Song, who's compilation started in 1068C.E., twelve years after the official ordering of the establishment of the Timber Pagoda. As there is no surviving Liao literature on official constructional rules, the contemporary *YZFS* is also precious to the study of Liao architecture.

⁵ None of the official historical records written by the people of Liao exists today; what we have are several personal collected works which have no direct relation to the history of this empire except *Fenjiao Lu* (焚椒錄), and tablets and funerary scrolls. Surviving historical accounts were written in later times.

Among the modern studies done are two doctoral dissertations written respectively by Wu Mei⁶ and Li Luke⁷. These dissertations treat the whole of the *YZFS* volume comprehensively, making efforts to interpret all the texts and illustrations by careful comparative readings among different versions of the *YZFS* and tracing the origins of the patterns mentioned. Before Wu and Li, several studies were done with focuses on the parts of the volume on colored paintings in the *YZFS*.⁸ By contrast, studies on similar subjects such as Qing-style architectural colored painting and mural paintings in cave temples are more established, and lend materials as well methodologies for the study of Song-style colored paintings. These form the basis for Wu and Li's studies. Wu's dissertation is focused on the origins and developments of patterns used under the Song, while Li's is on a detailed interpretation of the texts and illustrations in *YZFS*. They both provide their own interpretations of the *YZFS* texts and restorations of the sample drawings in colors. Both traced the developments of architectural paintings and their patterns until the Song period, clarifying the origins and characteristics of the patterns in *YZFS*, mainly in comparison to evidences from Tang Dynasty.

⁶ Wu Mei, "Yingzao Fashi Caihuazuo Zhidu Yanjiu He Beisong Jianzhu Caihua Kaocha" [A Study on the Rules of Color Painting in the Treatise on Architectural Methods and Investigation of the Architectural Color Paintings under the Northern Song] 《营造法式》彩畫作制度研究和北宋建築彩畫考察 (PhD diss., Southeast Univertisy, 2004).

⁷ Li, Luke, "Yingzao Fashi Caihua Yanjiu" [A Study of the Color Painting Section of the Treatise on Architectural Methods] 营造法式彩畫研究 (PhD diss., Tsinghua University, 2006).

⁸ Two examples are most closely related to this thesis: Guo Daiheng, "Song *Yingzao Fashi* Wucaibianzhuang Caihua Yanjiu" [A Study of the five-colored colored painting system in *Yingzao Fashi* under the Song] 宋《营造法式》五彩遍装彩画研究. In *Yingzao* [Build] 营造. Vol. 1. (Beijing: Beijing Chubanshe, 2011). Chen Xiaoli, "Dui Songshi Caihua zhong Nianyuzhuang ji Wucaibianzhuang de Yanjiu he Huizhi" [Research and Drawing of the Nianyuzhuang and the Wucaibianzhuang in Song Style Colored Paintings] 对宋式彩画中碾玉装和五彩遍装的研究和绘制. (Master thesis, Tsinghua University, 2001).

In their analyses of existing examples, both agree on the close relationship between Liao architecture and those under the Tang. According to Wu, many patterns used in Song and Liao were both inherited from Tang and thus are closely related, though the song patterns developed a more delicate style.⁹ Li argues that since the Liao and the Song were opposing empires, they were culturally isolated, and their official architectural styles were avoiding imitations of each other, aiming at establishing their own identities. Therefore, to the rulers of Liao who were trying to borrow sedentary cultures so as to establish their authority, Tang architecture was the major source of influence compared to that of the Liao.¹⁰ Nevertheless, by categorizing the surviving examples by geographic regions, Li is aware that Song examples are concentrated in southern China, which from late Tang period were already departing from the official styles of the northern area, developing its own style, which favored delicate and graceful decorations throughout the Five Dynasties (五代, 907-960).

Wu selects most of her examples from tombs, cave temples and mural paintings. These examples usually do not bear changes from later dynasties once they are painted. Although some of them may have layers of paintings, their dates have been worked out by art historians and archaeologists. However, as these examples are not painted as real architectural decorations, the styles and techniques used are influenced by their specific contexts. The architectural elements represented in these examples are usually not in precise proportions and shapes as those in wooden buildings, and are often distorted for the sake of the configuration of figural or scenery

⁹ Wu, “Yingzao Fashi Caihuazuo”, 17.

¹⁰ Li, “Yingzao Fashi Caihua Yanjiu”, 338.

paintings. More importantly, the architectural colored paintings in these examples work as flanking elements to the artistic paintings, and often show freely drawn strokes used most probably by painters, rather than the more rigid lines used by professional artisans of wooden architecture. Different from Wu, Li tries to include more examples from on-ground buildings, basing their dates on previous architectural studies. However, her selection of examples is problematic. Since early wooden structures usually underwent multiple restorations during later periods, their colored paintings may also have been repainted. Unfortunately, historical records are not clear about which parts of the buildings have been repainted. Even when the contents and phases of structural restorations are clear, the dates listed for the repair of wooden frames does not mean dates of the colored paintings on them. Dating based on styles is only capable of discerning clearly defined official periods in a general sense by now, so it is not helpful with layered paintings of similar styles, such as the Liao examples repaired during the Jin dynasty, which often imitated the characteristic patterns used in Liao. In this scenario, it is also difficult to differentiate the extent to which accidental changes were made while retracing the patterns of original paintings.

Apart from Wu and Li, two articles by Bai Xin on the main hall of Fengguosi (奉國寺) are the only ones currently available on the colored paintings during the Liao.¹¹ In his introduction

¹¹ Bai Xin, “Liaoning Yixian Fengguosi Daxiong Dian Jianzhu Caihua” [Architectural Color Paintings of the Daxiong Hall, Fengguo Monastery, Yi County, Liaoning Province] 遼寧義縣奉國寺大雄殿建築彩畫. *Zhongguo Shuhua* 2009(3): 118-122.

———, “Liaoning Yixian Fengguosi Daxiong dian Liaodai Jianzhu Caihua Feitian Chutan” [A Preliminary Study of the Color Painting Apsaras Under the Liao Dynasty in the Daxiong Hall of Fengguo Monastery, Yi County, Liaoning Province] 遼寧義縣奉國寺大雄殿遼代建築彩畫飛天初探. *Zhuangshi* 2008(4): 112-113.

Bai’s master’s degree thesis is on the same subject, but is neither published nor available in digital databases.

to the colored paintings used in the Timber Pagoda, Bai categorized the patterns by the members on which they are placed, and then the kinds of patterns used. In this hall, forty-two apsaras are painted under the girders; other patterns used on beams and girders include entangled floral branches, lotus patterns combined with other flower species, net-mesh patterns, and flowers depicted in a realistic style. On the brackets are found various kinds of the *shidi*(柿蒂) patterns, the curb chain pattern (*suowen*, 琐文), the net-mesh pattern and other flowery patterns.¹² These colored paintings were configured as a whole program and painted before the structural members were installed.¹³ He observed that, apart from the apsaras and realistic flowers, the decorative patterns are also painted with techniques used in ordinary painting, which is different from the conventionalized techniques introduced in the *YZFS*. Only a small portion, such as the gradation on net-mesh patterns, is painted using techniques particular to colored paintings.¹⁴ Contrary to Li's opinion, Bai finds the style in Fengguosi similar to some tomb paintings of the Song. Bai also observed that cultural characteristics in the northern regions are different from the southern regions within the territories of the Northern Song. Similar to the Liao, the northern areas of the Song kept on developing the styles inherited from Tang, while the government was trying to distinguish itself by forming a new cultural model based on the southern traditions.¹⁵ In this sense, the *YZFS* inherited the southern traditions and tastes in establishing rules and styles of Song architecture.

¹² Definition and variations of these patterns will be further considered in Chapter 1.

¹³ Some of the paintings were hidden in joints.

¹⁴ Bai, "Liaoning Yixian Fengguosi Daxiong Dian Jianzhu Caihua", 118.

¹⁵ Ibid., 122.

Another significant resource are the records from the investigations on the East Qing Mausoleum by Tamura Jitsuzō and Yukio Kobayashi in 1935 and 1939.¹⁶ Both give detailed descriptions of the mural paintings in the mausoleum including the decorative paintings imitating wooden architecture, published photographs of the mural paintings and provided some colored illustrations of the restored appearances of the tomb paintings. Furthermore, they identified the patterns used in the mausoleum with those in Fengguosi and Lower Huayansi, who's photographs were published even earlier in the works of Sekino Tadashi.¹⁷ These early photographs are crucial to the study of colored paintings, as the mural paintings of the East Qing Mausoleum have been decaying since its excavation, and the colored paintings in the Library Hall of Lower Huayansi were repainted during later repairments.

Chronological and Patronage Problems

Chronology

Since the dating of construction phases of the pagoda is the basis of other areas of study, such as the social background and the confirmation of its patron, and the purpose and meaning of the pagoda as well as the identification of its *zaojing* under a historical context, this issue is one

¹⁶ Tamura Jitsuzō, *Keiryō no hekiga: kaiga, chōshoku, tōji* [Wall Paintings from Qingling] 慶陵の壁画 : 絵画・彫飾・陶磁. (Kyōto: Dōhōsha, 1977).

Tamura Jitsuzō, Kobayashi Yukio, Iwamura Shinobu and Wilma Fairbank, *Keiryō: Higashi Mongoria ni okeru Ryōdai teiryō to sono hekiga ni kansuru kōkogakuteki chōsa hōkoku* [Qing Mausoleum] 慶陵: 東モンゴリアにおける遼代帝王陵とその壁画に関する考古學的調査報告. 2 vols. (Kyōto: Kyōto Daigaku Bungakubu, 1952).

¹⁷ Sekino, Tadashi, and Takeshima Takuichi, 1934. *Ryō, Kin jidai no kenchiku to sono butsuzō* [Liao-Jin Architecture and Its Buddhist Sculpture] 遼金時代の建築と其仏像. (Tōkyō: Tōhō Bunka Gakuin Tōkyō Kenkyūjo, 1934).

core thread that recurs in the academic history and is still not resolved. Nevertheless, scholars generally agree that the pagoda we see today was mainly constructed around 1056. For sake of this thesis, it is also crucial to clarify the contents of restorations to the first floor.

Chen Mingda was the first scholar to question the year 1056 as being the starting or the finishing date of the original construction.¹⁸ Using literature records on a broader scope than his predecessors, Chen argued that the construction of the pagoda should have taken around eight years, for it had been recorded that the construction of the Kaibaosi Pagoda, another wooden pagoda of a comparable scale and age built under the Song, took that number of years to complete.¹⁹ The time frame of construction brought about the question of whether the pagoda was built under the reign of Xingzong (r. 1031-1055) or his son, Daozong (r. 1055-1101). He learned that the empress of Xingzong and her father were from Yingzhou. Chen preferred the former after finding out from historical records that Xingzong was a sincere believer of Buddhism.²⁰ However, he did not provide any evidence to rule out the possibility of Daozong, who was, in fact, also keen about Buddhism.

On construction phases and the history of restorations, wooden and stone tablets have been carefully recorded by Murata Jiro²¹ and Chen Mingda²². Chen compared the pagoda with other

¹⁸ Chen Mingda's book *Yingxian Muta* was published in 1966.

¹⁹ Chen Mingda, *Yingxian Muta [The timber pagoda of Ying County]* 應縣木塔. (Beijing: Wen Wu Chu Ban She, 1966). 21.

²⁰ Ibid., 22.

²¹ Murata Jirō, 1988. "Oken Butsukyōji no Daimokuto [the Big Timber Pagoda of Fogong Monastery in Ying County]." In *Chūgo Ku Kenchiku Shi Sōkō : Butsuji Buttō Hen [Studies on architectural history of China, a chapter on Buddhist monasteries and pagodas]* (Tōkyō: Chūō Kōron Bijutsu Shuppan, 1988). 175-214.

²² Chen Mingda, *Yingxian Muta*.

brick or stone Liao pagodas that imitated wooden structures, and argued that the Timber Pagoda should have doors in the central bays of all four cardinal sides on the exterior walls, and windows in the central bays of the four intercardinal sides of the exterior walls of the second to the fifth floor.²³ These detailed materials provided the basis for the analysis of the contents of the four major restorations by Meng Fanxing and Zhang Changgeng²⁴, who apparently clarified problems on construction phases with the available evidence. According to them, the first restoration happened from 1193 to 1195 during the Jin (金) Dynasty, which was mainly structural reinforcements that did not deal with the first floor. The second major restoration started in 1320 under the Yuan (元) Dynasty and took about three years. The wooden windows of the second to the fifth floors were replaced by reinforcing walls that contained structural members. In 1322 or 1323, the Yuan emperor Yingzong (英宗) is recorded to have climbed the pagoda. The third restoration was in 1508 of the Ming (明) Dynasty. This time the structure of the first floor was reinforced. The walls were torn down and rebuilt, so as to add reinforcing posts, the doors on the east and west sides of the exterior walls were blocked, and the southern gate was moved to the vice order (*fujie* 副階). However, not all of the walls were torn down, and the mural paintings surrounding the Buddha's statue were not impacted during this restoration. The fourth restoration was in 1936. Walls of the second to the fifth floors were replaced by wooden doors and windows. Apart from these four major restorations, paintings on the statues were renewed many times by private donators of the Qing, including one renewal of the first

²³ Ibid., 24-26.

²⁴ Meng, Fanxing and Zhang Changgeng. "Yingxian Muta Weixiu Jiagu de Lishi Jingyan" [Experiences from the History of Repairs and Reinforcements of the Timber Pagoda in Ying County] 應縣木塔維修加固的歷史經驗. *Gujian Yuanlin Jishu* 4(73, 2011).

floor's Buddha in 1723.²⁵ There is no literature record regarding the repainting of the colored paintings on the first floor.

In the past three years, new radiocarbon dating data has come out in studies on the pagoda's chronology, but have not been published. This data will expectedly bring new clues to discerning contents and dates of past restorations.²⁶

Patrons and Secular Purposes

Understanding the patron of the Timber Pagoda is crucial to answering a series of questions, such as who were the providers of sacrifices painted on the boards above the doors to the inner groove on the first floor, whether there is any representational meaning in the statues, or any political motivation behind the design and construction of the pagoda, and which sutra(s) was (were) preferred in the programming of the Buddhist representation.

Though Chen Mingda attempted to nail down the construction date of the Timber Pagoda, he was also the first to debate its patron. Chen's argument was that based on the location of the pagoda, plus the cost of the architecture, it must have been financed by the ruling class. Therefore, Chen looked up historical records for aristocrats related to the Ying prefecture where the pagoda was standing. He found out that the empress of Emperor Xingzong as well as her father Xiao Xiaomu (蕭孝穆), a powerful man during the reign of Shengzong and Xingzong,

²⁵ As is recorded on the wooden tablet on the door frame of the south door to the inner groove of the first floor of the pagoda: “光緒三十四年本城居士弟子數人愿施工財金莊鮮耀” [In the Thirty-fourth year of Guangxu (1908) several believers in town donate works and money to redecorate (the statue) on their own willings]. See: Chen Mingda, *Yingxian Muta*, Appendix.

²⁶ Researches conducted respectively by Chinese Academy of Cultural Heritage and Tianjin University School of Architecture. Their samples are processed in the Laboratory of Scientific Archaeometry and Preservation of Cultural Relics in Peking University School of Archaeology and Museology.

was from that prefecture.²⁷ Based on several lines in historical records, he inferred that they were the patrons of the pagoda, and further used this clue as an evidence to testify that the pagoda was finished in 1056.

Through a philological study, Su Bai outlined the lineage of the noble family of Han (韓), and by adding social backgrounds as his evidence, Su proved that the Dule Monastery was the family shrine of the Han.²⁸ Using this approach, he further inferred that the Baogong Monastery was the family shrine of the empress' family of Xiao.²⁹ Though his research was not focused on the Xiao family, his methodology as well as his inference was enlightening.

Following Su, Zhang Changgeng compared the pagoda to Guanyin Pavilion of the Dule Monastery, but shifted his attention to their possible military importance.³⁰ His primary evidence was a stele of Liao whose inscriptions contained the words “shulou” (storied building for military watching) in describing Ying prefecture, and inferred that the *shulou* must be the Timber Pagoda. To certify the relation between the stele and the county of Ying, Zhang did a review on the documents recording the owner of the stele, who was a member of the family of

²⁷ Ye Longli, “Houfeizhuan” [biography of empresses and concubines 后妃傳], *Qidan Guozhi*, vol. 13.

²⁸ Su Bai, “Dulesi Guanying Yu Jizhou Yutian Hanjia” [the Avalokiteśvara Pavilion of Dule Monastery and the Han Family of Yutian in Ji Zhou] 獨樂寺觀音閣與薊州玉田韓家, *Cultural Relics* 07 (1985): 32-48.

²⁹ Ibid. Su found out from *Qidan Guozhi* that the name of the monastery was changed in later times from *Baogongsi* to *Fogongsi* by taboo, Xiao Xiaomu was called “guo bao chen” during the later half of Xingzong’s reign, and compiled book of his writings was called “*bao lao ji*”. These evidences are weak to form an argument alone.

³⁰ Zhang Changgeng, “Shuoxian Liao Hangfangyuan Qilingsi Bei Kao [a Study on the Stele on Qiling Monastery in Liao Hanfang Garden in Shuo County],” in *Liao Jin Shi Lun Ji [a Collection of Papers on the Histories of Liao and Jin Dynasties]*. Vol. 2, ed. Chen Shu. (Beijing: Shu Mu Wen Xian Chu Ban She, 1987), 120-131.

Xiao. To add evidence to the possible military function of the pagoda, he quoted Qi Yingtao's suggestion based on carbon dating to say that the pagoda had no statue in its upper stories during the period of the Liao, which may facilitate military watching. Though the possible military function had also been mentioned by Chen Mingda, who suggested that both the unique timber structure and the location of the pagoda were suitable for this function, Zhang's argument is still inadequate to confirm this possibility. First, as is pointed out by Wang Rongguo, "shulou" was an ordinary kind of building in every ancient walled city.³¹ Second, that the statues on the upper floors of the pagoda were dated to the Jin dynasty by radiocarbon dating does not mean that there was not any statues at the time of Liao, since they could have been repaired or substituted. Third, even if those statues did not exist during the Liao dynasty, this does not necessarily mean that the upper stories were used for military function. Nevertheless, it is common to suppose that tall buildings near borders could be used as watchtowers, and the power of buddhas and bodhisattvas can help keep people safe or win battles.³²

The strongest argument backing up the Xiao family as the sponsor of the pagoda was made by a collaborative research done by Zhang Changgeng, Ning Lixin and Zhi Peiyong, which focused on the family lineage of the Xiao and the noble apparatus under the Liao.³³ Their

³¹ Wang Rongguo, "Guanyu Yingxian Shijiata de Jianzao Niandai" [On the Date of Construction of the Sakyamuni Pagoda in Ying County] 關於應縣釋迦塔的建造年代. in *Shijia Ta Yu Zhongguo Fojiao* [*Śākyamuni Pagoda and Chinese Buddhism*] 釋迦塔與中國佛教, ed. Wen Jinyu. (Beijing: Zong Jiao Wen Hua Chu Ban She, 2009), 215-226.

³² One of the stone pagodas in Northern Song is even called Liaodida (watchtower 料敵塔), and the eleven-headed Bodhisattva Avalokiteśvara was supposed to have military power. See: Sun Lina, "Radiocarbon Dating and the History of Guanyin Pavilion C14 測年和观音阁修建史的初步研究——C14 測年在中国古代木结构建筑中的应用". (Master thesis, Tianjin Univertisy, 2012): 75.

³³ Zhang Changgeng, Ning Lixin and Zhi Peiyong, "Qidan Renyi Huanghou Yu Yingzhou Baogongsi Shijiata" [Empress Renyi of Qidan and the Śākyamuni Pagoda of Baogong Monastery in Yingzhou] 契丹仁

research was based on the suggestions made by Su, and raised several new pieces of evidence. First, they quoted the words in the elegy dedicated to Empress Renyi, which mentioned that she was responsible for the construction of pagoda(s). To prove that the pagoda(s) was the Timber Pagoda, the authors reviewed all the recordings that mentioned the construction of pagodas during the Liao, and concluded that the construction of a pagoda of such a scale must have political and military purposes, and that the pagoda that could be mentioned in the elegy must have such magnificence. One unique approach used by these authors is their analysis of the rules of noble dressings. Through this analysis, the social identity of the providers' portraits in the first floor of the pagoda is strongly proved. Further combining with a detailed research on the history of the Xiao family, as well as a consideration of the broad political background of the Chanyuan Treaty between the Liao and the Song empires, the authors identified the providers' portraits as six family members of the Xiao.³⁴ They concluded that the pagoda was constructed under the name of Empress Renyi as a family shrine, and that her plan was supported because the pagoda was also a significant facility for the enhancement of border defense. Though this argument does not rule out other possibilities, and is largely based on historical records, the reasoning is sound, as the authors take a broad scope with full considerations of seemingly every aspect related to this possibility. Their argument also supports that the pagoda was finished in the year of 1056.

懿皇后與應州寶宮寺釋迦塔. in *Liao Jin Shi Lun Ji [a Collection of Papers on the Histories of Liao and Jin Dynasties]*. Vol. 6, ed. Zhang Changgeng (Beijing: She Hui Ke Xue Wen Xian Chu Ban She, 2001), 99-144.

³⁴ The treaty in 1005 made peace between Liao and Northern Song for more than one hundred years, during which emissaries were sent, business and cultural exchanges were frequent. One may expect that the constructional technologies of Liao and the north regions of Song would easily be influencing each other after this treaty was made.

Nevertheless, none of the supporters of the Xiao family as the patron explains the hasty finishing of the construction, as it is evidently shown today. Some other scholars believe that the patron was Emperor Daozong.

In her introduction to the Timber Pagoda, Dr. Nancy Steinhardt follows Chen Mingda's analysis, but pays attention to Emperor Daozong instead of Xingzong.³⁵ She points out that Daozong was a devout Buddhist, and believes that the pagoda was dedicated to his father Xingzong. To provide a reason for the location of the pagoda, Steinhardt argued that Xingzong grew up in Yingzhou (Ying prefecture), for his foster mother was a family member of the Xiao and a native of Yingzhou, and that the Qidan custom, as Steinhardt claims, was that the sons of the emperors' family "were raised by the families of their Xiao-lineage mothers".³⁶ However, she does not provide any grounded evidence that the Xiao family raised Xingzong in Yingzhou, since a great family as important as the Xiao also has its forces in the capital cities.

Steinhardt also suggests a new probable purpose of the pagoda: as a symbol of the deceased ruler. She notices that the symbolization of buddhas as deceased rulers had been a practice in the Northern Wei dynasty when five caves were engraved with five buddhas believed to be likened to five emperors respectively, and that this practice could be adopted by the Liao rulers, as they might have used the statues of seven buddhas in the main hall of Fengguosi to represent seven past emperors of the Liao empire.³⁷ However, in these examples the statues of buddhas were

³⁵ Nancy Shatzman Steinhardt, "Yingxian Timber Pagoda," in *Liao Architecture* (Honolulu: University of Hawaii Press, 1997) 103-122.

³⁶ Ibid., 117.

³⁷ Ibid., 118-119.

arranged in a row, sculpted in the same manner and flanked by the same arrangement of bodhisattvas or providers, with each of them representing exactly one emperor; in the Timber Pagoda, each story presents a different group of statues including buddhas, bodhisattvas and lohans. The statues in the Timber Pagoda are arranged so differently that it is hard to interpret one or all of them as the symbolization of rulers.

As a predecessor of Zhang, Ning and Zhi, Luo Zhao is the first to use the providers' portraits as his evidence in arguing about the patron of the pagoda.³⁸ As he does not do any analysis with respect to the clothes worn by the providers, Luo identifies the providers based solely on literature records, and concludes that the pagoda was dedicated by Daozong to his mother, Empress Renyi, who married Emperor Xingzong. Considering the dressings of the providers (as was analyzed later by Zhang, Ning and Zhi), Luo's identification is not valid.

In the most recent article that mentions the providers' portraits, Yang Xueyong notices that the small scale and high position of the providers' portraits are unusual, for contemporary portraits were usually much larger and painted in a prominent place.³⁹ Hence, there is a new question as to the design of the providers' portraits and their relationship to the statues, which I will turn to in Chapter Three.

Buddhist Meaning and Programming of the Sculptures

³⁸ Luo Zhao, "Yingxian Muta De Zongjiao Chongbai Tixi" [the Religious Worship System of Statues in the Pagoda of Ying County] 應縣木塔的宗教崇拜體系, in *Yi Shu Shi Yan Jiu [the Study of Art History]* (1999), 12.

³⁹ Yang Xueyong, "Sustentation of Sakyamuni Pagoda: In Respect of the Providers" 從供養人壁畫看山西應縣佛宮寺釋迦塔的供養問題. *Shanxi Dang'an* 04 (2012), 20-26.

The eight-fold partition of Liao type has been mentioned by Sickman and Soper in their work of 1956 as related to the influence of Tantric Buddhism.⁴⁰ This was the first study to touch upon the Buddhist background of the Timber Pagoda. In 1980, in his review of Chen Mingda's book, Mo Zongjiang pointed out the approach of studying the religious planning of the pagoda through Buddhist doctrines and sutras of the Liao. However, later scholars can only explain the grouped statues of each storey respectively, but none can provide any hypothesis about the programming of all five stories of statues as a whole.

The core of academic discussions about the Timber Pagoda only began to turn towards its Buddhist meaning when Marilyn Gridley's book, *Chinese Buddhist Sculpture Under the Liao* was published in 1993. Gridley was the first to employ iconographical analysis as an approach to studying the pagoda. Her approach was unique, as has been described by Steinhardt: "careful, detailed description of images followed by stylistic and iconographic analysis in comparison to dated images, especially those from the same region."⁴¹ In dating the statues of the Timber Pagoda, Gridley takes full consideration of the repeated redecorations and restorations of later dynasties. Further, comparing the statues in the pagoda to those in the Lower Huayansi, she concludes that most of the statues in the pagoda have been greatly altered, but could be dated back to the end of the 11th century or early 12th century, which is the last period of the Liao

⁴⁰ L. C. S. Sickman and Alexander Coburn Soper, "The Barbarian Empires: Liao, Chin, and Yuan." Chap. 36, in *The Art and Architecture of China* (Baltimore: Penguin Books, 1956), 269-282.

⁴¹ Nancy Shatzman Steinhardt, review of *Chinese Buddhist Sculpture Under the Liao : Free Standing Works in Situ and Selected Examples from Public Collections*, by Marilyn Leidig Gridley, *The Journal of Asian Studies* 54, no. 1, Feb, 1995, 191-193. <http://www.jstor.org/stable/2058974>.

dynasty.⁴² In 1999, Luo Zhao re-assessed the age of the statues by comparing the state of Buddhist worship in Liao and Jin dynasties, and claimed that the statues must have been finished together with the pagoda.⁴³

Luo's research addressed the same subject as Gridley, and both of them tried to identify the statues on each floor respectively. Gridley focused on the study of sculptures, while Luo took more consideration of the words in the sutras. While their viewpoints on the identities of the statues were the same for the most part, they also yielded some competing results. Nevertheless, both of the two scholars agreed that the large Buddha on the first floor is Sakyamuni.

Furthermore, Luo's argument on the identity of the statues on the second floor was used by him as further evidence to suggest that the construction of the pagoda was closely related to Emperor Daozong and thus did not begin until 1056, for the belief of Huayan Sect was at its height during the reign of Daozong, as a series of events related to Huayan Sutra in this period can be found in literature records.

In her consideration of the religious meaning of the pagoda, Steinhardt was the first to notice that the year 1056 was close to the advent of the Mofa (termination of dharma, or final dharma) period in 1052, which led to a fanatic tide of sutra engraving and constructions of pagodas so as to store the treasures left by the Buddha.⁴⁴ This thread adds up to the reason for the large investment in building the Timber Pagoda.

⁴² Marilyn Leidig Gridley, *Chinese Buddhist Sculpture Under the Liao : Free Standing Works in Situ and Selected Examples from Public Collections*. Śāta-Piṭaka Series. Vol. 368. (New Delhi: International Academy of Indian Culture and Aditya Prakashan, 1993).

⁴³ Luo, "Yingxian Muta."

⁴⁴ Steinhardt, *Liao Architecture*, 119-120.

Following Steinhardt, in a religious study based on archaeological and historical records, Dr. Hsueh-Man Shen looked at the activities during the Liao dynasty preparing for the coming of Mofa period by enshrining the buddha's dharma body as well as the dharma *sarīra* relics.⁴⁵ In her article, it is further explained how Vairocana was worshipped as the dharma-body of Sakyamuni during the Mofa period. Differing from Gridley and Luo, Shen puts a special emphasize on Vairocana, and identifies the Buddha on the first floor of the Timber Pagoda as Vairocana, using the way the petals of the lotus pedestal are painted as the evidence. The argument of the relationship between Vairocana and Sakyamuni is strong, but the colored paintings on the petals as the evidence is problematic, for they could have been repainted since the Liao Dynasty.

Douba Zaojing

The *YZFS* explains *zaojing* under the term *douba zaojing* in its glossary, quoting several literature records.⁴⁶ To sum up, these quotations describe *zaojing* as being made by crossing beams like a well on the ceiling, and decorating it with lotus, the symbol of avoidance of fire, as if planted upside-down with the roots in the well. In the volume on joinery work, it is defined that *douba zaojing*, as the official term of Northern Song, was also called *zaojing*, *yuanquan* (circular spring 園泉) and *fangjing* (square well 方井).⁴⁷ The composition of a *douba zaojing*

⁴⁵ Shen Hsueh-Man, "Realizing the Buddha's "Dharma" Body during the Mofa Period: A Study of Liao Buddhist Relic Deposits." *Artibus Asiae* 61 (2, 2001), 263-303. <http://www.jstor.org/stable/3249911>.

⁴⁶ Li, Jie, *Yingzao fashi* 營造法式. (1103). Vol.2. Zongshixia • Douba Zaojing 卷二 • 总释下 • 鬪八藻井.

⁴⁷ Ibid., Vol. 8. "Xiaomuzuo Zhidu San • Douba Zaojing" [Rules for the Lesser Carpentry Work (Chapter) 3 • Douba Zaojing] 小木作制度三 • 鬪八藻井.

and the dimensions of its components are further described in this volume. To quote and translate the composition:

“At the bottom is called the square well (*fangjing* 方井)... in the middle is called the octagonal well (*bajiaojing* 八角井)...at the top is called *douba* (鬪八)...under the apex (*dingxin* 頂心), make a lotus that suspends downward (*chuilian* 垂蓮), or carve *diaohuayunjuan* (彫華雲卷, a kind of decorative cloud pattern) around a mirror (*mingjing* 明鏡) on the central part of the back board.”⁴⁸

Following the entry of *douba zaojing* is *xiao douba zaojing* (small *douba zaojing*). The *xiao douba zaojing* is explained to be composed of only the octagonal well, the *douba*, and the decorative components hanging from the apex.⁴⁹ As we will see, the composition of a small *douba zaojing* is closer to the form of some *zaojing* under the Liao (fig. 5).

In his article *The “Dome of Heaven” in Asia* which was published in 1947, Dr. Alexander Soper traces the western concept of celestial symbolism along the Silk Road to the east of Asia, in which he analyses the contacts and interactions among the Greco-Roman, the Indian and the Chinese cultures. The significant study of Dr. Soper is an extended postscript to Dr. Karl Lehmann’s article *The Dome of Heaven*. *The Dome of Heaven* is focused on “celestial

⁴⁸ Ibid. Original text: “造鬪八藻井之制：共高五尺三寸；其下曰方井，方八尺，高一尺六寸，其中曰八角井，徑六尺四寸，高二尺二寸；其上曰鬪八，徑四尺二寸，高一尺五寸，於頂心之下施垂蓮，或彫華雲卷，背內安明鏡。” Whether the *mingjing* is a real bronze mirror is still under debate. My translation of the composition of the apex is based on the explanation of the original text by Liang Sicheng. See: Liang Sicheng, *Liang Sicheng Quan Ji [Complete works of Liang Sicheng]* 梁思成全集. Vol.7. (Beijing: Zhong Guo Jian Zhu Gong Ye Chu Ban She, 2007). 213. I cannot guarantee the accuration of my translations. Probelems arise first with understanding the original texts written with Classical Chinese, using professional jargons of the Northern Song and oftentimes blurry choice of words, then with choosing proper expressions in English. Meanings may change a lot in this doubled process of translation. Furthermore, all the English works on premodern Chinese architecture share this problem of translation, but there has not been an agreement on a fixed glossary in English.

⁴⁹ Li Jie. *Yingzao fashi* 營造法式. (1103). Vol. 8. “Xiao Muzuo • Xiao Douba Zaojing” [Lesser Carpentry • Small Douba Zaojing] 卷八 • 小木作 • 小鬪八藻井.

symbolism in Western architectural decoration from Roman times into the Christian Middle Ages.”⁵⁰ From Lehmann’s narrative we can see two major trends in the development of heavenly ceiling decorations. First, the aim of using domes changes from everyday use to spiritual ones.⁵¹ Second, the development of the decorations on domes shows a tendency from random expressions toward systematic illustration of a “comprehensive order, and a formally correlated centralization.”⁵² In this process, persistence and changes coexist as the Christian churches inherited pagan traditions, among which the motif of the canopy of heaven survived, where elements such as the supporting figures in the corners were eliminated. These two patterns make a universal sense and could be expected in the development of on *zaojing* and its colored paintings when we compare the examples from Tang to Liao and Song.

Explaining in the geographical sequence from the west to the east along the Silk Road, Dr. Soper tries to find traces of ideas originating from the west, but they are already so scarce in the cave temples that any similarity could equally be attributed to universal logic in response to religious needs. By suggesting the use of canopy as a substitution of wood-framed cupola, he attributes the canopy as a later transformation of cupola.⁵³ However, the traditional use of canopies in early wooden architecture is not considered in Soper’s article due to lack of surviving examples. Further considerations of Chinese traditions are discussed by other scholars, which suggest a different thread of development and inheritance.

⁵⁰ Alexander Coburn Soper, "The "Dome of Heaven" in Asia." *Art Bulletin* 29, no. 4 (1947): 225.

⁵¹ Karl Lehmann, "The Dome of Heaven." *The Art Bulletin*. 27, no. 1 (1945):21.

⁵² *Ibid.*, 21.

⁵³ Soper, "The "Dome of Heaven" in Asia." 225-248.

In her dissertation, Wu Mei synthesizes narratives of past Chinese scholars and illustrates a more complete picture of the development of *zaojing* in forms and decorative patterns.⁵⁴ Her account begins with a suggestion of two different traditions during the Han dynasty of “circular pool, square well” (圓淵方井), and “plant lotus blossom upside down” (反植荷渠), which is recorded in one single sentence.⁵⁵ *Zaojing* is recorded to be used in halls, surviving examples of these are found in excavated tombs of noblemen (fig.6).⁵⁶ In these earliest examples, *zaojing* were used to highlight the significance of the halls, as well as their aristocratic identity. The Northern and Southern Dynasties (南北朝 420-589) mainly inherited the Han tradition of lanternendecke (*dousi* 鬬四), in which layered square wells are built upon each other in plastering the angles, and then combine the lotus *zaojing*. During this period Buddhism started to flourish, and *zaojing* is seen widely used in surviving cave temples, highlighting the sanctity of the represented Buddhist heavenly world.

The lanternendecke ceiling is probably derived from tents with a skylight used by Middle Asian steppes.⁵⁷ Han dynasty tomb ceilings show the lanternendecke with diamond patterns in the middle, which is lined adjacent to a lotus pattern. The diamond pattern indicates a window.⁵⁸

⁵⁴ Wu, *Yingzao Fashi*, 279-291.

⁵⁵ Ibid., 281.

⁵⁶ Ibid., 282.

⁵⁷ Sun Yihua, Sun Ruxian and Dunhuang yan jiu yuan (China), *Dunhuang Shiku Quanji [Complete Collection of the Dunhuang Caves]* 敦煌石窟全集. Vol.22. (HongKong: Shang wu yin shu guan (Xianggang) you xian gong si, 2003). 72-73.

⁵⁸ Ibid., 73.

The Tang dynasty, as Wu observes, experienced the bifurcation of both checkerboard lattice works and the use of *zaojing*. First, the small checkerboard lattice was separated from the traditional *pingqi* (平棊) of large grids to form the new *ping'an* (平闇) style, which was later defined in the *YZFS*.⁵⁹ Surviving wooden examples of this style include the middle gate of Horyō-ji, the Tengaimon (転害門) of Tōdai-ji and the Kondō of Toshodai-ji in Japan (original structure constructed in 8th century); the Tang example of the East Hall of Foguangsi (佛光寺東大殿) (857); the Liao example of Avalokiteśvara Pavilion of Dulesi (984) and the Song example of the main hall of Baoguoji (保國寺大殿) (1013). Among these examples, those with traces of original colored paintings used the red-and-white (*zhubai* 朱白) coloring system, which is different from what often appears in *pingqi* ceiling paintings, whose coloring system is similar to what the *YZFS* defines as five-colored system. However, what we see on the *zaojing* in the first floor of the Timber Pagoda should be assigned to the five-colored system, showing a characteristic of the five-colored *pingqi* paintings. The Liao examples are perhaps expanding the application of five-colored system from *pingqi* to *ping'an*, though this expansion could have happened earlier.

Second, there is no surviving Tang example of *zaojing* in wooden buildings. Those used in cave temples turned from imitation of wooden structures to the use of canopies.⁶⁰ Hence it seems that the wooden form of *douba zaojing* which covers the inner groove of the first floor of the Timber Pagoda appeared suddenly in history, with the earliest example of this form

⁵⁹ Wu, *Yingzao Fashi*, 288.

⁶⁰ *Ibid.*, 290.

appearing in the Avalokiteśvara Pavilion of Dulesi. Based on these facts, Wu infers that the wooden *douba zaojing* is an invention of the Later Tang period. Nevertheless, she is aware that there is no convincing evidence; historical records of the Tang tell only that the *zaojing* still used lotus blossoms at the centers.⁶¹ Moreover, extant wooden structures from the Tang that have decorative ceilings use only the flat lattice work, leaving a place for a mirror at the center above the major statues.⁶² If *douba zaojing* was developed during the Tang, these examples would more possibly have something that protrudes from the flat ceilings at the center.

In her article “Imagery and Evolution in the Patterns of Ceilings in the Dunhuang Grottoes from Early Times to Sui and Tang Dynasties”⁶³, the sinologist Yang Zhishui investigated the headstream of ceiling patterns in the Dunhuang cave temples through a strict literary research and explanation of images. Though she is focused on ornamental elements and their representations in images, her adding the umbrella canopy (*sangai* 傘蓋) to sources of inspiration for ceilings in cave temples is worth noting. Moreover, her research expands the scope of material evidence in the study of *zaojing* from architectural evidence to painted images, carvings on tablets and funerary wares. Yang’s analysis can be divided into two major parts: the resources of ceiling shapes, and the particular kinds of ceiling decorations.

⁶¹ Ibid., 290.

⁶² See the East Hall of Foguangsi. Contemporary examples in Japan include Lotus Flower Hall of Todaiji and Kondo of Horyoji

⁶³ Yang, Zhishui, “Dunhuang Zaoqi zhi Suitang Shiku Kuding Tu’an de Yixiang ji qi Yanbian” [Imagery and Evolution in the Patterns of Ceilings in the Dunhuang Grottoes from Early Times to Sui and Tang Dynasties] 敦煌早期至隋唐石窟窟頂圖案的意象及其演變. In “Si Chou Zhi Lu : Tu Xiang Yu Li Shi” [the Silk Road: Images and History] 絲綢之路:圖像與歷史, edited by Bao Mingxin. (Shanghai: Dong hua Daxue Chubanshe, 2011) 1-12.

Yang explains the canopy-formed ceilings of Dunhuang as the combination of two elements: the traditional *jing* or *zaojing* used in palaces and halls, with the decorative pattern of lotus as an omen of avoidance of fire; and the curtained tents, as both a definition of a space and a symbol of dignity, which probably appeared around the same time as the *jing*.⁶⁴ As to the umbrella canopies, Yang categorizes it to the tent canopy.

According to Yang, the use of umbrella canopies in Buddhist art started during the Northern and Southern Dynasties, when canopies as symbols of dignity were fashionable in mundane life. Artisans from the east adapted umbrella canopies to honor the new deities from Buddhism. During this period, canopies in Buddhist art were exactly the same as those for secular use.⁶⁵

Like Wu, Yang's argument supports that the ceilings of Tang cave temples were imitating tent canopies and were not using *zaojing* as their resources.⁶⁶ During the period of Sui and Tang, at the centers of tent-shaped ceilings in cave temples, the lotus was not the only theme any more. Images of composite flowers, grapes with twining branches, Kalavinkas, running rabbits⁶⁷ and so on were used at the center. Narrating from the early stage of the Dunhuang caves in the 4th and 5th centuries towards the Sui and the Tang dynasties, Yang summarized the development of ceiling patterns in Dunhuang as moving towards a systematic expression, during the process of which the original images were abstracted and symbolized, the tent canopies for Buddhist use

⁶⁴ Ibid., 3.

⁶⁵ Ibid., 6.

⁶⁶ Ibid., 7.

⁶⁷ Probably representing the moon.

emerged as an independent style.⁶⁸ This rule of development is the same as that of the Western “domes of heaven”, and is also suitable in explaining the development of decorative colored paintings in wooden architecture.

Existing scholarships has traced the development of *zaojing* in its own form, being generally described as appearing at the center of ceilings, while hardly any attention has been paid to its status in relation to the other spatial elements.

⁶⁸ Yang, “Dunhuang Zaoqi”, 8.

CHAPTER TWO

COLORED PAINTINGS ON THE *ZAOJING*:

DESCRIPTION AND INFERENCE OF ORIGINAL PATTERNS

As has been explained in the first chapter, the form of a *zaojing* as it appears in the *YZFS* is composed of a square well (*fangjing* 方井) at the bottom, an octagonal well (*bajiaojing* 八角井) in the middle and a *douba* (鬬八) at the top. Four beams (*suibanfang* 隨瓣方) intersect with the sides of the square well to make an octagonal shape upon which the octagonal well stands (fig.5). *Douba* is the most highly decorated part of a *zaojing*. From the eight corners of the octagonal well, eight *yangma* (陽馬) beams point at the center, slant upward and meet at the apex.

According to this composition, the *zaojing* on the first floor of the Timber Pagoda is only the *douba* part of it. The other surviving *zaojing* under the Liao in forms similar to the one in the first floor of the Timber Pagoda include the ones in the Avalokiteśvara Pavilion (Guanyingge 觀音閣) in Jixian (薊縣) (fig.7), the Library Hall (薄伽教藏殿) of Lower Huayansi (下華嚴寺) in Datong (fig.8), the dome of the central chamber of East Qing Mausoleum decorated imitating the appearance of a wooden *zaojing* (fig.9), plus one other *zaojing* on the fifth floor of the Timber Pagoda (hereafter mentioning of *zaojing* in the Timber Pagoda without indication of the floor means the one in the first floor) (fig.10). Apart from the last one, all these *zaojing* are consisted only of the *douba* part as is defined in *YZFS*, only that they have to use the *suibanfang* when rising from a square ceiling frame composed of crossed beams. The *zaojing* on the fifth floor of the Timber Pagoda bears a different composition from the other Liao examples: its *douba* appears to be rising from a short octagonal well which sits on a square well. However, the

octagonal well does not rise directly from the square well in the way described by the *YZFS*; wooden components connecting these two parts are messily placed. Moreover, those ceiling boards on this floor which have no colored painting look relatively new, and the girders at the foot of the square well bear holes left by tenons right under the beams framing the octagonal well.⁶⁹ The colored paintings on this floor not only look new, but also are in the Qing style (清式). Obviously this *zaojing* has been re-installed. Its original composition could be the same as the other surviving Liao examples, or with an additional short octagonal well.⁷⁰

The colored paintings on the *zaojing* of the Timber Pagoda mainly use vermilion flower patterns lined with white, green and cyan gradations on members of linear shapes, and crimson⁷¹ background boards. The colors used identify these paintings with the system of *wucaibianzhuang*, which is described in *YZFS* as follows:

“On members like girders and *gong*, leave green lines around the outer edges, then apply a cyan, green or vermilion gradation. Inside use flowers in alternating five colors,

⁶⁹ Zhang Chi, “Yingxian Muta Siceng Neicao Zaojing Sheji Fuyuan Yanjiu: Jianlun Liaodai Fojiao Jianzhu Shensheng Kongjian Dingmian Sheji Guilü” [Restoring the Design of the Zaojing in the Inner Groove of the Fourth Floor of the Timber Pagoda in Yingxian: Together With a Study on the Rules of Design for the Top Plane of Sacred Spaces in Liao Buddhist Architecture] 应县木塔四层内槽藻井设计复原研究:兼论辽代佛教建筑神圣空间顶面设计规律”. (BArch thesis., Tianjin University, 2011) 10.

⁷⁰ Ibid., 10.

⁷¹ Since the *zaojing* of the Timber Pagoda has been repainted, and I did not get a chance to see the original ones in Fengguosi in situ, this thesis does not intend to give an accurate description or argue about the use of colors. Nevertheless, a close indication can be obtained, as *YZFS* gives detailed descriptions of how the colors are made, and scholars have given suggestions of the exact color in terms of the CMYK system. For further reference see: Li Luke, “Yingzao Fashi Caihua Yanjiu” [A Study of the Color Painting Section of the Treatise on Architectural Methods] 营造法式彩画研究. (PhD diss., Tsinghua University, 2006) 24, 31-32. Colors used in my restoration follow those used by Li. According to the descriptions in *YZFS*, the formal colors in high-ranked buildings are made from minerals, so the colors can endure.

use red, cyan or green to fill the backgrounds, leave a border line and apply gradation against the outer edges.”⁷²

To infer the original colored paintings on the *zaojing* of the first floor of the Timber Pagoda, the *zaojing* examples under the Liao are the closest reference. However, existing materials leave only the examples of the Lower Huayansi and the East Qing Mausoleum with colored paintings of the same style as can be inferred from the *zaojing* in the Timber Pagoda, the *wucaibianzhuang* style.⁷³ The parts between *yangma* of both examples are not latticed; in other words, though these two examples are largely the same as the *zaojing* of the Timber Pagoda in terms of compositions of wooden members, they are of different methods of decoration in terms of colored painting. Nevertheless, the Daxiongbao Hall of Fengguosi provides us with a perfect example of the official *wucaibianzhuang* colored painting in a wooden building under the Liao. Generally speaking, the Liao examples that can be referred to suggest that the colored paintings on the *zaojing* of the Timber Pagoda are rare. To trace the probable appearance of the patterns when in lack of Liao example, related examples from earlier times as well as the Northern Song should be considered. Nevertheless, though we are not provided with many Liao examples, these are, in most cases, sufficient as indications of the Liao manner of colored paintings that distinguish and identify themselves when other examples are brought into the conversation.

⁷² Li Jie, “Caihuazuo Zhidu • Wucaibianzhuang” [Rules for Colored Paintings • Five-colored System] 彩畫作制度 • 五彩偏裝. *Yingzao Fashi*. 1103. Vol.14. Original text: “五彩偏裝之制: 梁、栱之類、外棧四周皆留綠道, 用青、綠或朱疊量, 梁栱之類綠道, 其廣二分。斗栱之類, 其廣一分。內施五彩諸華間雜, 用朱或青、綠剔地, 外留空綠, 與外綠道對量。其空綠之廣, 減外綠道三分之一。” Here only the large characters are translated. The small characters are notes for the width of the borders.

⁷³ As the other terms used to name the wooden members and decorative components in Liao architecture, this term from YZFS.

A restored illustration of the colored paintings on the *zaojing* in the Timber Pagoda will be given at the end of this chapter. To enable the creation of a restored illustration, first the colored paintings will be described detail by detail. Then the patterns will be identified by comparing them to contemporary as well as earlier related examples. The *zaojing* on the first floor of the Timber Pagoda can be treated in three parts: the apex (*dingxin* 頂心), the structuring beams and lattices, the back panels (*beiban* 背板).

The Apex

The apex as we see today is decorated with a circular board that is delicately painted with Daoist themed patterns; obviously it is a recent addition. The apex members in the Avalokiteśvara Pavilion of Jixian and the fifth floor of the Timber Pagoda are lost; the ones in the Library Hall of the Lower Huayansi and the central chamber of East Qing Mausoleum are in the shape of circular panels, but the ones in the former have been repainted and the paintings on the one in the latter have washed away, if they ever existed. In other words, not only the apex of the *zaojing* of the Timber Pagoda is lost, but the other Liao examples leave no indicative trace of its composition except that it could have a circular panel.

As I have mentioned in Chapter One, the official standard of the Northern Song, *YZFS* indicates two standard treatments to the apex. The first is called *chuilian* (垂蓮), the second is *diaohuayunjuan* (彫華雲卷) and around a mirror.⁷⁴ Liang Sicheng explained the text in his

⁷⁴ See Chapter One, *Douba Zaojing*. Or see: Li Jie, “Xiaomuzuo Zhidu San • Douba Zaojing” [Rules for the Lesser Carpentry Work (Chapter) 3 • *Douba Zaojing*] 小木作制度三 • 鬪八藻井, *Yingzaofashi*. 1103. Vol.8. Original text: “于顶心之下施垂蓮, 或彫華云卷, 背内安明鏡。” To note again, whether the *mingjing* is a real bronze mirror is still under debate.

notes for *YZFS*. The first method was to use a suspended column and make the bottom part like a suspended lotus column (*chuilianzhu* 垂蓮柱). The second method was to install a mirror at the bottom of the suspended column or at the intersection of the eight *yangma*, and decorate around it with *diaohuayunjuan*.⁷⁵

The Main Hall (1030) of Kaihuasi in Gaoping, Shanxi was constructed under the Northern Song. It still has a suspended column with a lotus painted on the bottom plane hanging down the apex of the surviving *zaojing*. This is probably an example of how the lotus apex as described in the *YZFS* would look like, but comparable Liao examples have not been found. Several excavated tombs under the Liao and the Song have mirrors installed at the apex of their domed ceilings, or have a white circle painted.⁷⁶ The same practice is common in Buddhist Halls in Japan not only for the same period, but also in earlier times. It is very likely that a mirror was originally tied to the circular board on the apex of the *zaojing* on the first floor of the Timber Pagoda. In the Phoenix Hall (鳳凰堂) of Byōdō-in (平等院) (1052), mirrors are installed on the bottoms of major beams. These mirrors are ornamented by carved petals around (fig. 11). This might be an indication of how the second method of treating the apex would look like. Nevertheless, there is no outstanding example that shows any clue of whether or not the apex of *zaojing* under the Liao were treated in methods similar to what was introduced in the *YZFS*.

⁷⁵ Liang Sicheng, *Liang Sicheng Quan Ji*, Vol.7, 213.

⁷⁶ Su Bai, *Baisha Songmu [Tombs of the Song in Baisha]* 白沙宋墓. (Beijing: Wenwu Chubanshe. 1957). 62. One of them is a tomb of the year 959 under the Liao, where a bronze mirror is tied to the bottom of the apex stone of the tomb chamber.

None of the existing Liao examples of *zaojing* indicate any trace of the application of a suspended column. In the case of the Avalokiteśvara Pavilion in Dulesi, it is clear to see that the eight *yangma* beams are tapered at the ends so as to meet at the apex, and these ends are not painted. Though the pavilion has been re-installed during the 1990s, the unpainted ends clearly indicate that no matter if there used to be a cylindrical member at the apex, it cannot be a suspended column, for the component at the apex must have been covering the ends of the *yangma*. Furthermore, the grand statue of the eleven-headed Bodhisattva Avalokiteśvara is in close relation to the *zaojing* above, with the last head almost touching the apex. A suspended column hanging down the apex would ruin this relation and be aesthetically unappealing, as it would fill up the space between the statue and the apex. In the first floor of the Timber Pagoda, the statue of Śākyamuni is likewise rising high to form a close relation to the *zaojing*. Though the space between its head and the *zaojing* is larger than the case of the Avalokiteśvara Pavilion, a suspended column would make its bottom blocked by the statue in the horizon of a viewer looking up from the ground. Therefore, no matter if it is a lotus or a mirror, the apex of the *zaojing* of the Pagoda should be originally decorated with a circular panel-shaped component directly covering the ends of the *yangma*.

Structuring Beams and Lattices

1. *Yangma* and beams at the bottom: net-mesh pattern

The *Yangma* are painted with the net-mesh pattern (*wangmuwen* 網目紋)⁷⁷ (fig.12). Two strips of this pattern are painted on them, except for the one pointing to the west-southwest, on

⁷⁷ This term was invented by modern Japanese scholar Tadashi Sekino who discovered Fengguosi.

which three strips are painted. Each unit is composed of three layers of expanding vermilion (朱) lines in the shape of net cords, with the outermost layer shared by neighboring units. A flower is painted at the center, and flower petals (sometimes whole flowers) reach out from the ends of the inner two layers of vermilion lines. The shapes of the flowers and petals are unclear. The two *yangma* on the northern side do not have reaching-out petals. At the ends of the vermilion rings on the inner side as well as the outer side of the outmost rings, small portions of yellow painted in the shape of crescents appear immediately next to the rings. Some of the yellow crescents are divided into two curves with a protruding angle in the middle. The contours of the flowers, petals and vermilion lines are all banded with white lines. The spaces between the red lines are filled with greens (綠) or dark cyans (青), with the middle layer using cyan and the inner and outer layers using green. These colors are not painted evenly; some places are darker and some are lighter. There is no outstanding regularity as to the shapes of the flowers and the way the green and cyan colors are painted.

The bottoms of the eight beams at the bottom of the *zaojing* are mostly repainted in patterns of Qing (清) style, but net-mesh patterns can be discerned. One of them displays three-ringed net-mesh patterns painted in two strips, with the traces left by flowery patterns at the centers of the units, but there appears to be no decorating petals at the ends of the rings (fig. 13).

The net-mesh pattern was originally identified with the colored paintings in the Main Hall of Fengguosi as characteristic and regularized in colored paintings of the Liao that derived from the patterns often used to depict the mandorlas around images of buddhas and bodhisattvas

(fig.14).⁷⁸ The Main Hall of Fengguosi was established by Emperor Shengzong (聖宗) and constructed in 1020 in the hometown of his mother, Empress Dowager Chengtian (承天太后).⁷⁹ As a royal temple, the hall houses the statues of seven buddhas, and most of its original architectural colored paintings are preserved. As is introduced earlier, the first floor of the Timber Pagoda also displays seven buddhas in all, though they are not placed in a line, six of them are mural paintings, and the identity of these seven buddhas are different from those in Fengguosi. Nevertheless, colored paintings in these two buildings are comparable in style and rank.

The Main Hall of Fengguosi does not use decorative ceiling boards. All the beams and rafters are exposed. Net-mesh patterns are painted on the bottoms of some of the beams and girders as well as some of the *gong* (栱) of the brackets in the hall. Colored paintings on the bottoms of beams are arranged according to the significance of the place of the beams, so that the most complicated net-mesh patterns are placed on the girders stretching out in front of the seven buddhas.⁸⁰ Similar to those in the Timber Pagoda, these most complicated ones have two rings of red lines in each unit, and each of their centers is marked by a conventionalized four-petaled flower. The second most complicated type has three rings of red lines, and the centers of their units are decorated with a red dot (fig. 15). The red-lined rings are not decorated by petals as it

⁷⁸ Sekino Tadashi and Takeshima Takuichi, *Ryō, Kin jidai no kenchiku to sono butsuzō* [Liao-Jin Architecture and Its Buddhist Sculpture] 遼金時代の建築と其仏像. 2 vols. (Tōkyō: Tōhō Bunka Gakuin Tōkyō Kenkyūjo, 1934), 66. For a little more details, see also: Sekino Tadashi. 1938. *Shina no kenchiku to geijutsu* [Sino Architecture and Its Art] 支那の建築と藝術. (Tōkyō: Iwanami Shoten, 1938). 288.

⁷⁹ Nancy Steinhardt, *Liao Architecture*, 87-88.

⁸⁰ Bai Xin, “Liaoning Yixian Fengguosi Daxiong Dian Jianzhu Caihua”, 120.

appears in the Timber Pagoda. If we follow this rule of hierarchical placement by degree of complication, the net-mesh pattern used in the *zaojing* of the Timber Pagoda is more complicated than any of the same pattern used in Fengguosi, so it is marking extreme significance of the *zaojing* and the space it covers.

The flowers used at the center of the units on the *yangma* of the Timber Pagoda are likely the same as those used in Fengguosi, which is the conventionalized four-petaled flower. In Fengguosi, this kind of flower is oval-shaped, cut into four segments as the petals by straight lines, plus a round center. The petals are initially filled with white, then painted as two parts in an inner layer with vermilion, then dotted with green as the innermost parts adjacent to the center. The center of the flower is marked by dark green plus an outer ring of lighter green.

In Fengguosi, the parts between the red framing rings are filled with blue-greenish colors painted using the color-gradation technique (*dieyun* 疊暈). The gradating portions are subdivided into smaller portions of equal width, with each of the portions painted in one of the colors from the gradating color series. The directions of gradations follow the rule of alternation: If the first strip is painted with darker colors in inner portions, the neighboring strip has darker colors in the outer portions. *YZFS* introduces in detail the the colors to be used in gradation:

“Starting from the light colors, first is *qinghua*, [use *lühua* in green, *zhuhua* powder in red (gradation).] Then use third-cyan, [use third-green in green, third-vermilion in red (gradation).] Then use second-cyan, [use second-green in green, second-vermilion in red (gradation).] Then use great cyan, [use great-green in green, dark vermilion in red (gradation).] Inside great cyan, use dark black ink to mark the center, [use dark grass juice to shade over the center in (great) green, use dark purple mineral (color) to shade over the center in (dark) vermilion.] Outside *qinghua*, leave one layer of white base [red and green (gradations) use the same rule. Inside this layer (in green and red gradations) use second-*lühua* or use gamboge juice to shade over. If

it is in narrow or small places like flowery patterns and borders, or if it is in high or distant places, do not shade or mark with dark colors like third-cyan.]. . .”⁸¹

The exact colors used in cyan, green and red gradations of *YZFS* are analysed by Li Luke.⁸²

The colors used in the gradation in Fengguosi are generally darker than the colors used in Li’s system. Comparing to Li’s standard, they are close to the green colors, but also with a little inclination to cyan.

Apart from white, the *YZFS* provides five colors at most in one gradation, and each gradation uses only one series of color. The net-mesh patterns with three rings used in Fengguosi also appear to be using five colors in each gradation.

Though there is only one example of original net-mesh pattern that survives from Liao, many mural paintings of Jin (金, 1115-1234) are preserved in the same region as Liao examples, following the styles of Liao. Simplified net-mesh patterns that curve in single directions without centers are often used in the halos of buddhas, using only the green series in their gradations, and may make some changes by using alternating darker and lighter series of colors. The six buddhas painted on the walls around the statue on the first floor of the Timber Pagoda are of Jin style, but their compositions are subject to the rules of Liao.⁸³ Different from other mural paintings of Jin,

⁸¹ Li Jie, *Yingzao Fashi*, 1103. Vol. 14, “Wucaibianzhuang • Dieyun zhi Fa” [five-colored system • gradation method] 五彩徧裝 • 疊暈之法. Original text: “自淺色起，先以青華，綠以綠華，紅以朱華粉。次以三青，綠以三綠，紅以三朱。次以二青，綠以二綠，紅以二朱，次以大青，綠以大綠，紅以深朱；大青之內，以深墨壓心，綠以深色草汁罩心，朱以深色紫礦罩心。青華之外，留粉地一暈。紅綠準此，其暈內二綠華，或用藤黃汁罩加。華文、綠道等狹小，或在高遠處，即不用三青等及深色壓罩。……”

⁸² Li Luke, “Yingzao Fashi”, 24, 32.

⁸³ Chai Zejun, *Shanxi si guan bi hua* [Mural Paintings in the Monasteries and Temples in Shanxi] 山西寺觀壁畫. (Beijing: Wen wu chu ban she, 1997) 28.

the patterns used in the buddhas' mandorlas here are much closer to the existing Liao example in Fengguosi, using wide bands for the patterns and layered red framing lines with discernable units (fig. 16). It is highly possible that these patterns followed the original ones of Liao. They use only the green gradation, but make alternating effects by putting the lighter colors and darker colors in separate rings. Though the current state of the *zaojing* is that cyans and greens are used alternately in neighboring rings, a rule of painting is that darker greens can be made by adding blue. If the tracer is not sure of the original colors, it is natural to use both cyans and greens to indicate both possibilities. Therefore, for the net-mesh pattern used on the *zaojing*, the color series is most probably green. The middle rings are darker as it appears now, which seems to be only the Jin practice, for in the Fengguosi example, all the rings use exactly the same gradation. If it is so, then the *zaojing* should have been repainted during the repairment in Jin, while the original Liao patterns would more probably use one single green gradation with the same colors in every segment.

Combining all these clues, the gradations of the net-mesh pattern used in the Timber Pagoda might have five colors in a green gradation that is a little more cyanish and darker than that of Li's system.

As to the yellow "crescents" inside the red lines, these are not found in the Fengguosi, but are sometimes used in the buddhas' halos of mural paintings of the Jin. It also appears in some of the halos of the buddhas painted on the surrounding walls in the Timber Pagoda. This seems to be an additional evidence supporting the possibility that the portraits and the *zaojing* have been repainted during the Jin. Nevertheless, it could also be the result of misreading of the fragmented Liao pattern, as some pigments of the net-mesh patterns in Fengguosi peel off following the

contours of color chips, leaving a crescent shape of exposed wooden surface, and the natural process may leave some irregular contours, which explains the pointing out angles in some of the ones in the Timber Pagoda (fig.12).

The petals stretching out from the ends of the red framings appear to have a comparable example in the colored paintings on the brackets in Fengguosi (fig.17). This petal pattern, together with the flowers at the centers of net-mesh units, is related to the larger pattern category of *shidi* (柿蒂), as we will see in the lattice section.

Additionally, the strips of net-mesh patterns in both Fengguosi and the Timber Pagoda are intentionally arranged as such that the patterns are cut neither in the middle nor by the borders at the edge of the beams. The buddha's light is expected to extend beyond the beams and fill up the air around.

2. *Suibanfang*: variations and simplifications of the net-mesh pattern

The reinforcing secondary beams (*suibanfang* 隨瓣枋) are identified with two different, yet related patterns (fig.18). The three on the eastern, southern and southeastern sides are painted with radiating diamond patterns, while the rest bear a kind of S-shaped pattern. Similar to the net-mesh pattern, these on the *suibanfang* are framed by red lines flanked by white bandings, filled in between by gradating green colors. Both patterns also appear on the beams in Fengguosi, filling spaces between the apsaras and flowery patterns.⁸⁴

For the S-shaped pattern, the framing red lines are depicted in the same way as the simplest type of net-mesh pattern in Fengguosi (fig.19), only that the shapes have a much larger ratio of

⁸⁴ Bai Xin, "Liaoning Yixian Fengguosi Daxiong Dian Jianzhu Caihua", 120.

length to width. Consequently this pattern could be using the same composition of colors as the Fengguosi example.

The diamond pattern also appears in the mandorla of the buddha depicted on the eastern wall. Most of the halos of the six buddhas use the net-mesh pattern. Since they appear in the same visual component, the composition of lines and colors of the diamond pattern should be subject to the same rules as the S-shaped pattern. In the Library Hall (1038) of Lower Huayansi, the repainted ceiling, as well as the mandorla of the statues, also bear this diamond pattern. Like the case of the Timber Pagoda, the diamond pattern appears on the beams of the *pingqi* checkerboard ceiling and the *yangma* of *zaojing*, most of which are painted with the net-mesh pattern. Neither of the two buildings shows any regularity as to the appearance of this pattern, but at least it can be understood as a variation of the net-mesh pattern, sharing the same purpose of representing the buddha's light.

3. The lattices: description

The lattices are painted with green backgrounds and decorative red-and-white flowers on intersections and mid-points of edges. There are four different compositions for the latticing members. Three of them are painted with corresponding compositions of decorative flowers, and the fourth has two different flower compositions, making the number of patterns of colored paintings five in all. Distances between parallel latticing members and the arrangement of flower patterns are set to achieve an integrated overall effect.

The north and south portions of the inner ring of the *zaojing* have triangular lattices, five-petaled flowers on the intersections, and a bead pattern with a spiral white line at the mid-points of the legs of the isosceles triangles. (fig.20)

Other lattices of the inner ring are diamond-shaped. The east and west portions have five-petaled flowers on the intersections, four-petaled flowers of the same style at the mid-points of the edges, only that they are smaller because of the width of the lattice. Nevertheless, many of the flowers are reaching out of the edges. (fig.21)

On the intercardinal sections of the inner ring, the intersections are painted with four-petaled flowers plus reaching out petals of the same shape as the ones in the net-mesh pattern of the *yangma*, pointing at the sharp angles of the diamonds. At mid-points of the edges are placed bead patterns, each with a white s-line cutting it into halves. (fig.22)

The cardinal portions of the outer ring have triangular lattices formed by intersecting square-shapes of the intercardinal direction with parallel straight lines on the cardinal direction that points to the center of the *zaojing*. On the intersections are painted four-petaled flowers, plus one out-reaching petal at each of the intercardinal corners. The mid-points are marked by red beads with white outlines (fig. 23).

The intercardinal portions of the outer ring have square lattices. The intersections are painted with four-petaled flowers. Except from the southwestern portion, the mid-points are marked by red dots of the same kind as in the cardinal portions (fig.24). It is worth noticing that the green background on lattice members of this kind show traces of X-shaped lines intersecting on the mid-points, and these lines can be linked with each other by extending the lines into a net of square checkerboard shape turned forty-five degrees from the directions of the lattice members. This is indicating that the green backgrounds are not necessarily painted following the structural composition of the lattice members; combining with the flowers covering the intersections, the colored paintings tend to blur the traces of joints left by installation.

4. The lattices: gradational background, *shidi* decorative flower patterns, and beads

The closest example to the composition of these lattices is the painted tunnel vaults of the passages in the East Qing Mausoleum (fig.25). The East Qing Mausoleum is for Emperor Shengzong (圣宗, r. 982-1031) and his two empresses. The tunnel-vaulted ceilings of the passages in the mausoleum are painted after ornamental coffered ceilings found in wooden architecture, in the appearance of lattice works of hexagonal and small triangular shapes formed by straight lines running in three directions. The lining “lattice members” are painted with green gradation, and conventionalized four-petaled flowers are painted on each intersection. The green gradation has three layers, with the lighter colors in inner layers, plus a white line highlighting the middle of the “lattice members.” The degrading green bands do not overlap where the “lattice members” should intersect with each other; rather, they revolve around the hexagons and triangles, forming continuous bands concealing seams which would appear in installed real wooden works. This further confirms the above-mentioned argument that the paintings tend to blur structural traces left by joints. The lattices are treated as one whole body; the bottom planes of the lattices are regarded as an ideal plan. The four-petaled flowers appear to be of the same looking as those which appear on the net-mesh patterns in Fengguosi, only that the contours of the petals and the center are depicted with additional crimson lines. The green background on the lattice members of the *zaojing* on the first floor of the Timber Pagoda is most probably painted the same way as that in the East Qing Mausoleum. Judging from the colors and shapes, the flowery patterns on the same places of the *zaojing* in the Timber Pagoda should have been originally painted using the same colors and techniques as the conventionalized four-petaled red-and-white flowers in the East Qing Mausoleum and Fengguosi. However, as is described

above, they have many more variations and complicated combinations than the single kind in the latter two buildings. Nevertheless, since the four-petaled flower pattern has appeared in both of the surviving Liao examples, it is very likely a commonly used pattern in the official five-colored ornamental painting system of Liao, and hence could be considered as one of the flower patterns used in the Timber Pagoda, though its highly completed geometrical shape would not be suitable for those with stretching out additional petals.

Similar decorative colored paintings in latticed ceiling of wooden architecture are found in the Phoenix Hall of Byōdō-in. The latticing members here are painted in blue gradation, only that the direction is opposite from that of the Qing Mausoleum. White outlines are used at the edges while black lines are painted along the median lines. The intersections are also painted with four-petaled flowers, but these flowers are more complicated than the Liao examples, and the borders of the petals are three connecting curves, rather than the quarters of a circle or oval.

The ornamental flowers of the Timber Pagoda also appear on the intersections and mid points of the latticing members of the checkerboard ceiling of the Library Hall in Lower Huayansi. Unfortunately, most of these flowers have been clumsily repainted, so their original appearances are indistinguishable. The ones worth mentioning are the traces left on the decorative ceiling of the shelves, which are showing five-petaled flowers in similar shapes to the kind of four-petaled conventionalized flower in Fengguosi.

The four-petaled flowers in Fengguosi are also used on the sides of beams and girders of the building. A second kind is found on the *dou*, which is also a four-petaled flower without additional petal, only that the edge of the petals are double-curves. Most of the colored paintings on the sides of timber members in Fengguosi have washed away. Nevertheless, colored paintings

of the painted beams and brackets in the chambers of the East Qing Mausoleum have been better recorded and reveal more kinds of four-petaled decorative flowers (figs. 26 and 27). One of the half-cut four-petaled flower pattern is worth noticing: from each of its petals a green leaf is reaching out. The composition of this kind of flower is the same as those at the intersections of the cardinal portions of the outer ring in the *zaojing* of the Timber Pagoda, only that the “leaves” of the flowers in the pagoda are painted red.

The four-petaled ornamental flowers are defined in the *YZFS* as *shidi* (柿蒂). It is a commonly used, highly decorative pattern that has the most kinds of variations among the floral patterns both as it appears in the book and in existing examples.⁸⁵ The pattern may appear as halves or even portions according to the condition of the given surface space. Numerous examples of various *shidi* patterns have survived from the Tang, the Five Dynasties and the Song, which provide a large database of the variations of the *shidi* pattern.

Here I select some examples that are similar to the ones used in the Timber Pagoda: the ones painted on the pillars of the Emperor Li Bian’s Mausoleum (李昇陵, 943) of the Southern Tang (南唐) and on the pillars of the Baisha Tomb No. I of the Song (白沙宋墓一號墓, 1099) are close to the ones used for the intercardinal portions of the inner ring, with reaching-out petals/leaves on two opposite sides (figs.28 and 29); Of the *zaojing* in the Mogao Grottoes of the Tang, Cave 161 has the three-petaled pattern on one of the decorative bands that is comparable to the petals stretching out from the ends of the red-lined rings of the net-mesh pattern;⁸⁶ Cave 322 has

⁸⁵ Li Luke, “Yingzao Fashi Caihua Yanjiu”, 151.

⁸⁶ Guan Youhui and Jinwen Guan, *Dunhuang tu an* [Patterns in Dunhuang Grottoes] 敦煌圖案. (Lanzhou: Gansu Renmin Meishu Chubanshe, 1996) 101.

four-petaled flowers with additional petals reaching out from each of the four petals, which is comparable to the flowers used on the cardinal portions of the outer ring, only that the ones in the Mogao Cave have flanking leaves.⁸⁷ Furthermore, Tang caves also have five-petaled flowers painted in the same way used in various places.⁸⁸

To sum up, the various *shidi* patterns used in the East Qing Mausoleum indicate the same enthusiasm of the Liao people in using all kinds of *shidi* patterns in their decorative paintings as did the Tang and the Song people. The patterns painted in wooden structures are generally more accurately painted than those appearing in tombs and cave temples, and when they are applied on the highly regulated lattices, they are arranged accordingly in regulated orders.

Beads in the patterns depicted in the Timber Pagoda are rare among the other examples of bead patterns. One example is the green beads cut into halves by an S-line in the antechamber of the East Qing Mausoleum (fig. 27). A bead with a spiral line is found on the necklace of the statue of Boddhisattva Avalokiteśvara.⁸⁹ In Cave 188 (mid-Tang period) of the Mogao Grottoes, the ceiling is painted imitating the *pingqi* checkerboards.⁹⁰ The circular centers of the six-petaled flowers at the center of each board feature the spiral white line. When the spiral is not curving a lot, it looks like half of an s-line (fig. 30). This example is showing the most clear

⁸⁷ Ibid., 52.

⁸⁸ Sun, Yihua, et al., *Dunhuang Shiku Quanji [Complete Collection of the Dunhuang Caves]* 敦煌石窟全集. Vol. 14. (HongKong: Shang wu yin shu guan (Xianggang) you xian gong si, 2003).

⁸⁹ Zhang Sirui and Ding Yao, "Prototype of Buddhist Ceiling under the Liao". *East Asian Architecture Culture International Conference*. (Singapore: National University of Singapore, Department of Architecture, 2011) 60.

⁹⁰ Sun, Yihua, et al., *Dunhuang Shiku Quanji [Complete Collection of the Dunhuang Caves]* 敦煌石窟全集. Vol. 14. (HongKong: Shang wu yin shu guan (Xianggang) you xian gong si, 2003) 139.

identity of the bead pattern: as the center of the flower. Therefore, beads painted on the *zaojing* of the Timber Pagoda can be understood as representations of small flowers or blossoms.

The Back Panels

The back panels are painted in crimson. Traces of flowery patterns left by white pigments are found between the lattices. Judging from their shapes, they seem to be four-petaled *shidi* flowers in the same style as those painted in the net-mesh patterns of Fengguosi. However, flowery patterns found on the back panels of other Liao examples are all in freestyle (figs. 25 and 8). Nevertheless, all those freestyle flowers are painted on larger grounds.

From the information in this chapter, an inferred original appearance of the *zaojing* on the first floor of the Timber Pagoda has been drawn by the author of this thesis (fig. 31). There are still problems and uncertainties, most noticeably as to the appearance of the apex and the patterns used for the back panels. Nevertheless, a preliminary picture of the composition of the colored paintings in this complicated *zaojing* under the Liao is formed. Purposes and meanings of these patterns as well as their composition, the *zaojing*, can be studied accordingly.

CHAPTER THREE

MEANINGS OF THE ZAOJING AND ITS POSITION IN THE PAGODA

In this chapter, the purposes and meanings of the patterns used in the *zaojing* of the Timber Pagoda, together with the *zaojing* itself, are analysed by tracing the origins and changes in their historical applications. Then, this *zaojing* will be examined under the spatial context of the first floor of the pagoda. Finally, the spatial arrangement of the whole of the Timber Pagoda is explained by describing the processional path of a potential worshipper, and the uniqueness of the *zaojing* of the Timber Pagoda will be indicated through such a description.

Canopy, *Zaojing* and Apex: Liao Inheritance, Reinterpretation and Reinvention

In Chapter One, we have reviewed the development of *zaojing* and various ideas of its representational purposes from the Han Dynasty. As is explained by Yang, *zaojing* was not a resource for the design of ceilings in cave temples after the Northern and Southern Dynasties.⁹¹ However, it is worth noticing that above the heads of Buddhas and Bodhisattvas the umbrella canopies are widely used ever since they are adapted for Buddhist art during the Northern and Southern Dynasties. In the cave temples under the Tang, a Buddha is emphasized by an umbrella canopy every time it appears, and this also appears oftenly above portraits of Bodhisattvas. Different from the umbrella canopies for aristocrats, by this period, the ones for the Buddhist deities have developed a distinguishable style. They are decorated by treasure patterns that are also used on the finials of pagodas. When the inside of an umbrella is depicted, there is always a

⁹¹ Yang, “Dunhuang Zaoqi”, 7.

big lotus flower hanging downward at the center.⁹² When a statue is made with its mandorlas painted on the wall, the halo is sometimes centered by a lotus.⁹³ In this scenario, the use of a lotus has transitioned from the symbol of avoidance of fire to highlight the Buddhist deities as the sacred flower in Buddhism.

This thread of development has perhaps also found its traces in wooden architecture, if we take those examples in Japan into consideration. The Lotus Flower Hall (Hokke-dō 法華堂) of Tōdai-ji (c. 746) is decorated by a latticed ceiling of the small checkerboard *ping'an*. Above the heads of statues, eight mirrors surrounding one large mirror ornamented by lotus petals are attached to the ceiling. Lights are depicted as radiating from the centers of the large mirrors.⁹⁴ The use of the image of the mirror is further analyzed by Dr. Eugene Wang as a system of representing Buddhist images according to the Lotus Sutra that at the same time facilitate the concentrated the reflections of the worshippers.⁹⁵ Phoenix Hall of Byōdō-in (1052) uses an additional canopy above the head of the statue of Amita Buddha apart from the latticed *pingqi* ceiling. As above-mentioned earlier Japanese examples indicate, the Japanese examples also show only flat latticed ceilings without any trace of a *zaojing*. Nevertheless, the practice of highlighting the tops of the Buddhas and Bodhisattvas using canopies, lotus and mirrors had

⁹² To mention a few examples: Mogao Grottoes, Caves 217, 135, 103. See: Dunhuang Wenwu Yanjiusuo, *Tonkō Bakukōkutsu* [Mogao Grottoes in Dunhuang] 敦煌莫高窟. Vol. 3. (Tōkyō: Heibonsha, 1981).

⁹³ To mention a few examples: Mogao Cave 225, 217. Ibid., 169, 184.

⁹⁴ Suzuki Kakichi, *Early Buddhist architecture in Japan*. (Tokyo: Kodansha International, 1980) 93-94.

⁹⁵ Wang, E. Yuejin, “Mirroring and Transformation”, in *Shaping the Lotus Sutra: Buddhist visual culture in medieval China*. (Seattle: University of Washington Press, 2005) Chapter 5. 238-316.

clearly been a common practice during the Tang. Though these examples of wooden structures do not feature anything like the dome-shaped *zaojing* under the Liao, the use of mirror and lotus anticipate the regulated treating of the apex of *zaojing* as is described in *YZFS*, and thus is expected to have been inherited by the Liao examples.

In Tang cave temples, the tent canopies always appear above the center of the entire interior space. What they represent is the significance of the architecture or the interior space overall, and in this sense follows the tradition of *zaojing* in Han examples. In Liao examples, however, the *zaojing* highlights the significance of the major statue it covers by putting its apex above the head of the statue. Although this sculptural center overlaps with the spatial center in the case of the Timber Pagoda, this difference is clear in the cases of Dulesi and Lower Huayansi, where *zaojing* are removed from the spatial center. In this sense, the purpose of the *zaojing* of Liao is again inheriting the umbrella canopies in earlier traditions.

As has been reviewed in Chapter One, Tang treatment of decorated ceilings in wooden structures is the flat checkerboards of *pingqi* and *ping'an*. All the evidence by now is adding up to the possibility that the *douba zaojing* might be an invention under the Liao. In this scenario, what the *YZFS* defines as a little *douba zaojing* works as an intermediate state that adds an octagonal well to the *douba* before the full form of *douba zaojing* adds the square well. Nevertheless, early history of the Liao example of Avalokiteśvara Pavilion is suggesting that the surviving structure was a reestablishment after an earlier building under the Tang.⁹⁶ Hence this

⁹⁶ The earliest historical record said that the Guanyin Pavilion was “reestablished” rather than “constructed”. See: Zhuyizun, *Rixia Jiuwen Kao* 日下舊聞考, vol. 30. Further evidences are compiled and explained in: Sun Lina, “Radiocarbon Dating and the History of Guanyin Pavilion C14 測年和观音阁修建史的初步研究——C14 測年在中国古代木结构建筑中的应用”. (Master thesis, Tianjin Univertisy, 2012) 75.

Liao style of *zaojing* still could have appeared during the Tang, but only towards the later period of it.

In Tang examples, umbrella canopies appear as separated decorative elements in cave temples. If *douba zaojing* is a Liao invention, they inherited and developed the traditions of umbrella canopies, *zaojing* of Han and latticed ceiling of Tang by merging the umbrella canopy with the early tradition of *zaojing*, treating it as an architectural element integrated within the decorative ceiling system by remodelling it as correspondent to the latticing patterns. In this sense, the Han tradition of *zaojing*, as a symbol of dignity in halls and palaces, is adapted to the representation of Buddhist images, just as the umbrella canopies were adopted by artisans of the Northern and Southern dynasties to highlight the Buddhist deities. The remodelled umbrella canopy that used to highlight the Buddhas now speaks a stronger language of showing the dominance of the architectural space by the statue it covers, by defining their spatial status in the ceiling. By merging the decorative component for Buddhas and Bodhisattvas with the system of architecture, ceiling design under the Liao is participating in a closer conversation with the housed statues than Tang examples. From the beginning, the programming of a Liao wooden structure has to consider its relation to the statues and the extent to which it can serve to present the power of Buddhist images.

Buddha's Light and Heavenly Flowers: Decorating the Heavenly Sky, Mirroring a Spatial Image

The Lotus Sutra depicts the scene when the Buddha in the lotus position started to preach. Heavenly flowers showered from the sky, and the Buddha shed light that lit up the universe.⁹⁷ The scene of preaching Buddha in different situations has been represented repeatedly in the cave temples. While the light of the Buddha might be depicted by different patterns of mandorlas, the sky showering flowers with flying apsaras bears more commonly shared expressions. Early examples have the apsaras and heavenly flowers randomly placed on the ceilings or walls above the Buddha, but by the Tang dynasty, patterns painted on ceilings had been regulated, and the Liao examples are largely following the Tang examples of composition of flower patterns at intersections of the latticed beams of checkerboard ceilings.

Wood pattern (s-shaped pattern imitating the texture of timber), water pattern (also s-shaped) and diamond pattern are identified as close variations of the net-mesh pattern.⁹⁸ The *YZFS* does not have a category of “net-mesh pattern”, but records two wood patterns. The diamond pattern

⁹⁷ See: *Lotus Sutra*, Vol.1. English text: “After the Buddha had spoken this Sutra, he sat in full lotus and entered the samadhi of the station of limitless principles, body and mind unmoving. At that time there fell from the heavens a rain of *mandarava* flowers, *mahamandarava* flowers, *manjushaka* flowers, and *mahamanjushaka* flowers, which were scattered upon the Buddha and the entire great assembly... Then the Buddha emitted from between his brows a white hair-mark light which illumined eighteen thousand worlds to the east, omitting none of them, reaching below to the Avichi hells and above to the Akanishtha Heaven. From this world were seen all the living beings in the six destinies in those lands. Further were seen all the present Buddhas in those lands and all the Sutras and Dharma spoken by the Buddhas was heard.” Translation by the Buddhist Text Translation Society. See: <http://cttbusa.org/lotus/lotus1.asp>

The Lotus Sutra and the Avatamsaka Sutra were found inside the statue of the Buddha on the fourth floor of the pagoda. The Huayan sect was popular during the period when the Timber Pagoda was constructed. See: Guojia Wenwuju Baohu Kexue Jishu Yanjiusuo, et al., “Shanxi Yingxian Fogongsi Muta nei Faxian Liaodai Zhengui Wenwu” [Precious Cultural Relics of the Liao Found in the Timber Pagoda of Fogong Monastery in Yingxian, Shanxi] 山西应县佛宫寺木塔内发现辽代珍贵文物, *Cultural Relics* 1982(6).

⁹⁸ Bai Xin, “Liaoning Yixian Fengguosi Daxiongguan Jianzhu Caihua”, 120.

is commonly used as borders framing the mural paintings or the tent canopies in cave temples.⁹⁹

The Mogao Caves of the Tang period feature the popularity of flowery patterns in the painting of mandorlas. Nevertheless, the water pattern appeared in several caves of the transitional period between the flourishing Tang and the mid-Tang ages.¹⁰⁰ They look like the s-shaped pattern in the *zaojing* of the Timber Pagoda. These patterns are painted as symmetrical, so that they meet at the top in the case of a halo and form the same shape as that of one unit of the net-mesh pattern.

If the original plan of the Timber pagoda follows the configuration of what is shown in other Liao pagodas, it should have four doors on the four sides of the exterior walls.¹⁰¹ Imagined illustrations under this condition have been drawn by Chen Mingda (fig. 32).

As one enters the front door, the image that appears in sight is the Buddha Śākyamuni preaching in lotus position, framed by the front door to the inner groove, flanked by Ananta and Kasyapa painted on each side of the door, plus the three empresses as sacrifice providers, painted above the door (fig. 33). The *zaojing* as well as the mural paintings of six preaching buddhas is blocked. When one steps forward to stand at the door to the inner groove, the *zaojing* and six mural paintings appear. The ten-meter buddha's statue dominates the space of the inner groove; together with the high surrounding walls, a narrow and high corridor around the Buddha is formed. The dazzling *zaojing* highlights the buddha's head by presenting the mirror/ lotus at the

⁹⁹ To mention a few examples: Dunhuang Caves 117, 123, 129. See: Dunhuang Wenwu Yanjiusuo, *Tonkō Bakukōkutsu* [Mogao Grottoes in Dunhuang] 敦煌莫高窟. Vol. 3. (Tōkyō: Heibonsha, 1981), plates 72, 71, 144.

¹⁰⁰ Sun, Yihua, et al., *Dunhuang Shiku Quanji* [Complete Collection of the Dunhuang Caves] 敦煌石窟全集. Vol. 14. (HongKong: Shang wu yin shu guan (Xianggang) you xian gong si, 2003) 133-136.

¹⁰¹ Chen Mingda, *Yingxian Muta*, 27.

apex; finely latticed checkerboards painted with small heavenly flowers fall outwards and downwards together with the radiating buddha's light presented on the *yangma* and *suibanfang*, representing the scene of the sky when the Buddha is preaching, as is described in the Lotus Sutra.¹⁰² The radiating form of the *zaojing*, together with the radiating net-mesh patterns cut by the edges of *yangma*, suggests a motional picture of the sky that expands beyond the limited planes of the wooden members and the limited space of the inner groove. The tiny scale of colored paintings on the *zaojing*, together with the unproportionally large buddha's head, creates the dual effect of exaggerating both the size of the statue and the height of the ceiling. The huge images of Buddhas immediately surrounding the viewer create a powerful and serious sense. Flanking on both sides of the heads of the six surrounding buddhas are pairs of apsaras providing heavenly lotus by holding plates filled with flowers on one hand and scattering flowers with the other hand. Similarly, the six providers, holding sacrifices in their hands, are painted in unusual places, probably corresponding to the status of the flanking apsaras. In this scenario, the entire inner groove presents one spatial image of the preaching Buddha, with Ananda and Kasyapa leading the viewer into this spatial representation as well as framing the boundary of it, while the providers seem to be about to enter the religious world inside. Their status as both at the same height as the apsaras and framing the boundary of the inner groove space at the door gives them a dual identity as both the aristocrats that live in the profane world and the "outstanding man" (borrowing the Christian term) entering the sacred world.

¹⁰² See: *Lotus Sutra*, Vol.1. See also: note 97.

The other six preaching images have their own mandorlas while the central statue does not. If the three-dimensional image of the buddha at the center is mirrored by the portraits on the surrounding walls, then the mandorlas of the surrounding portraits should find a mirrored representation for the statue. Under this condition, the *zaojing* also stands as the three-dimensional mandorla of the central statue, which forms the top frame of the space of the inner groove and interacts with the six surrounding images with its radiating structure as well as painted elements.

Additionally, the three-dimensional image of the preaching buddha at the center is mirrored and multiplied by the six two-dimensional images of the surrounding preaching buddhas, with the corresponding pictorial elements as described above, adding up to the religious power of the sacred inner-groove space while expressing more meanings than one single statue by presenting seven mudras at the same time. The viewer finishes learning the preachings of the buddha by practicing circumambulation around the buddha's statue; in this sense, the surrounding six figures also help to convert this temporal process into the spatial image.

Arrangement of All Five Stories: Uniqueness of the First Floor and its *Zaojing*

The arrangement of the first floor is different from those of the other four floors. Basically the upper four floors should also have been surrounded by walls with mural paintings on the interior sides, and the spatial arrangement is similar with the statues at the center, mural paintings framing the space and circular corridor in between for circumambulation. However, the statues of the other floors are not as dominant as the colossal buddha on the first floor, and are separated from the outer groove by barriers (*paicha* 排杈). The viewer enjoys a more

comfortable corridor space that is wider, lower and better lighted (doors on cardinal sides and windows on intercardinal sides), but is also distanced from the statues that are placed on altars. The eyesight is not blocked by walls anymore, but the worshipper is not allowed to enter the inner groove. Though the statues still occupy the inner groove, the inner groove no longer presents one whole picture; the whole of the interior space does instead. The smaller proportion of spatial occupation of the statues on these floors suggests a less powerful dominance. Correspondingly, *zaojing* on these floors are not supposed to cover the whole of the ceilings of the inner grooves, but only the range of the main statue. The first floor attracts the viewer emotionally with its participant space and powerful image, while the other floors are more narrative with more complicated pictorial presentations in statues and mural paintings that distance themselves from the viewer, forming an exhibition space.

Additionally, as *YZFS* was published later after the construction of the Timber Pagoda, the Late Liao example of Kaiyuansi (1105) shows a different form of *zaojing* that strictly follows that introduced in the *YZFS*. Apparently the Liao people were keenly learning from the Han-Chinese culture throughout the history of the Liao Dynasty, trying to rival the Song dynasty not only in political and military powers, but also in cultures of architecture.

CONCLUSION

Comprehensive studies were done on the wooden structure of the Timber Pagoda and the standard colored paintings based on *YZFS*. Focusing on one *zaojing* example, this thesis makes an effort to combine the strengths of researches on both structure and ornamentation by treating the composition of the wooden members and the colored paintings on the *zaojing* in the Timber Pagoda as a whole, and employing the approaches of both architectural analysis and art historical studies.

Most surviving timber structures of the 10th and 11th centuries ancient China have been repaired more than once, during which information on the decorative elements suffer greater losses than structures. Basing on the sources of influence suggested by former studies, an attempt is made to infer the patterns of colored paintings and their composition on the *zaojing* which is repainted following the original contours. The result is surely one among several possibilities, but by looking at representative patterns used in this *zaojing* of the Liao, like the *shidi* pattern and the net-mesh pattern, the changing trends in the choice of popular patterns, the adoption of patterns used on surfaces of different structural members in earlier times as well as a process of conventionalization reveal themselves in a conversation among examples from Tang, Liao, Northern Song and the book of standards. Nevertheless, as this thesis is restoration-oriented, the lineage and changes in meanings of these patterns as well as their colors used are not explored.

Through the lense of architectural ornamentaion, the design of the *zaojing* of the Timber Pagoda proves again the genius of Liao creation in borrowing, reinterpreting and developing the elements and traditions of wooden structures, in this case for the expression of the power of the

religion of Buddhism.¹⁰³ The Liao use of *zaojing* is a combination of the Han tradition of *zaojing* as a symbol of aristocratic dignity, the Northern and Southern dynasties adoption of umbrella canopies to highlight the significance of Buddhist deities, and the two Tang treatises of the ceilings by depicting tent canopies in cave temples as well as by using decorative lattices in wooden structures. Through this combination, not only the power of the main statue gains multiple layers of expressions, but also the relation between statues and architectural elements is intensified. This combination, by employing the regulated compositions of wooden members, also form the basis for the conventionalization of colored paintings on the ceilings, producing a dazzling yet regulated, vivid yet conceptualized depiction of the sky above the preaching Buddha's head.

For the limited scope of this study, the materials this thesis has managed to cover and the aspects it has considered are not without problems. Examples from cave temples in China and wooden structures in Japan are not fully explored, nor those from farther west, as have been suggested by Dr. Soper. These examples would work more effectively if their systems and developments can be analyzed before being compared to the Liao examples. Comparable examples of possible sources of influence are largely those from Tang dynasty, but surviving examples of earlier dynasties, especially those from the Northern dynasties whose sponsors were also from the steppes, could also have been learned by the people of the Liao. The accuracy of cave temple representations of wooden members is questioned, and the possibility that they are very different from wooden structures is not ruled out. To what extent is architectural design

¹⁰³ Steinhardt, Nancy Shatzman. 1997. *Liao Architecture*. Honolulu: University of Hawaii Press. In this general account of Liao architecture, Dr. Steinhardt tries to prove this point through formal analysis.

related to sutras, and which scene depicted in a sutra would be favored in the programming of the Timber Pagoda is still a question to be asked.

Moreover, two technical problems remain to be solved in the restoration of colored paintings of the *zaojing*. First, publications of colored illustrations are problematic in the precision of colors, and the colors of colored paintings in situ are influenced by their specific light environments. Second, sequences and methods for the painting process also influence the result of colored paintings. An effort will need to be made on a systematic analysis of the techniques used by the artisans under the Liao. The restorational study in thesis focuses on patterns, and an evaluation of accurate colors and dimensions of these colored paintings is yet to be done.



Fig. 1. Appearance of the Timber Pagoda

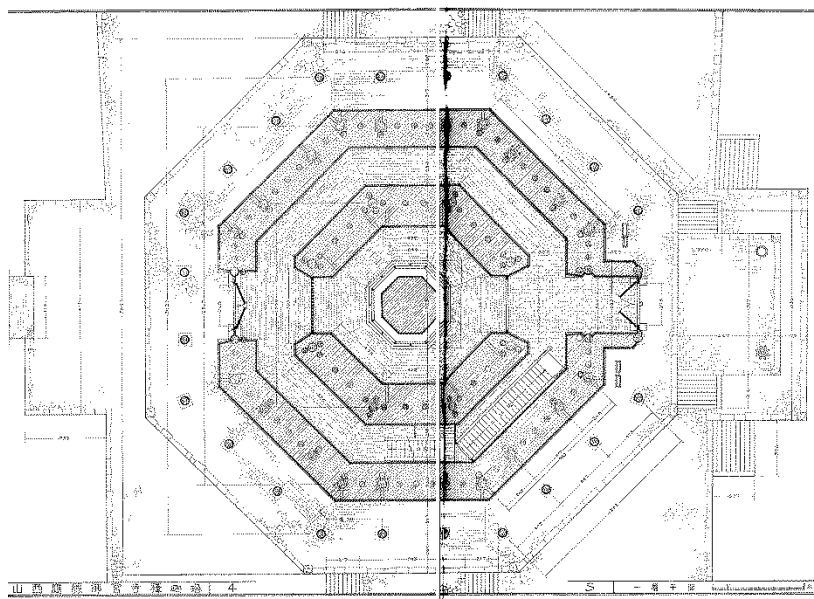


Fig. 2. First Floor Plan of the Timber Pagoda (north is to the left)

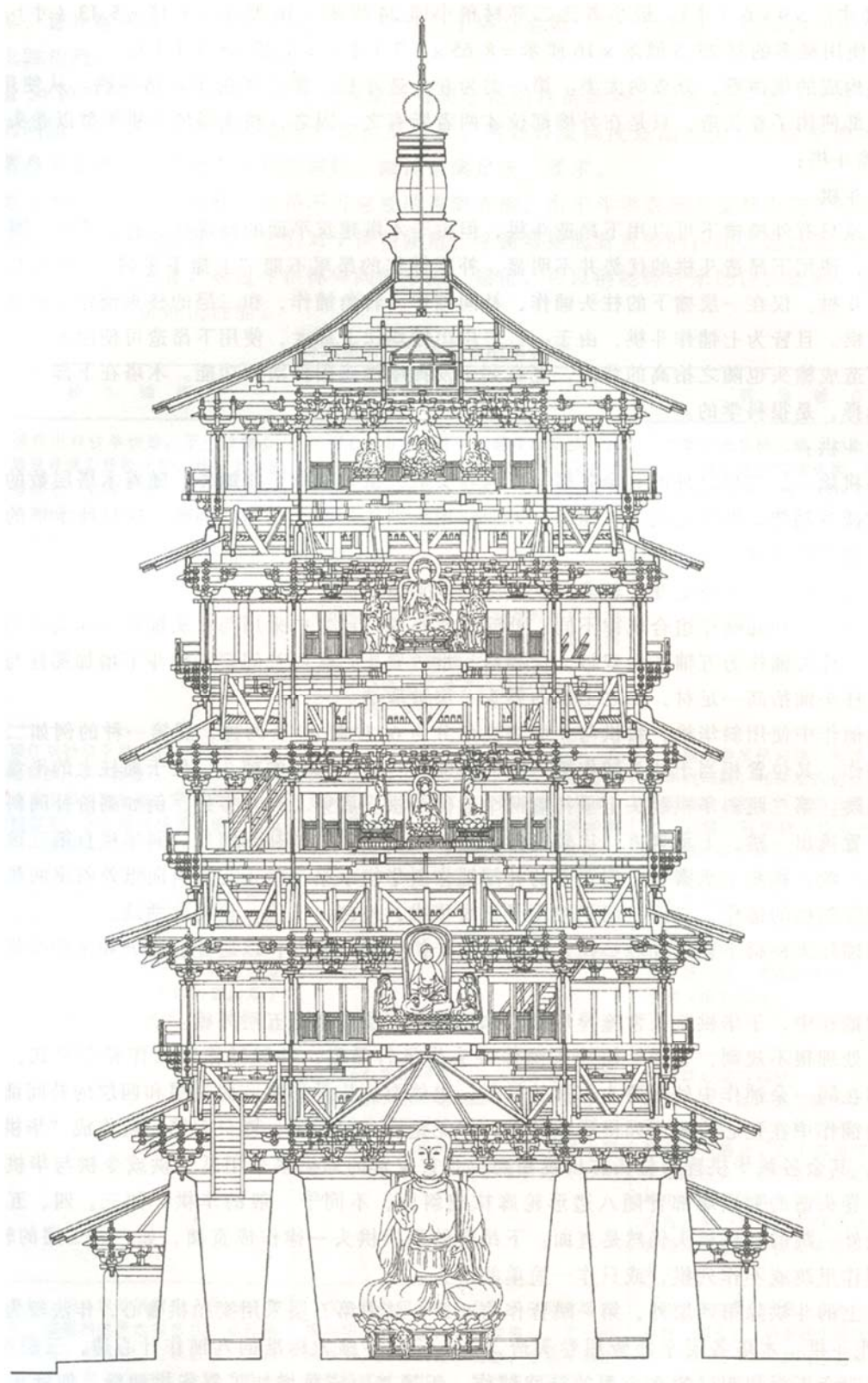


Fig. 3. Section of the Timber Pagoda

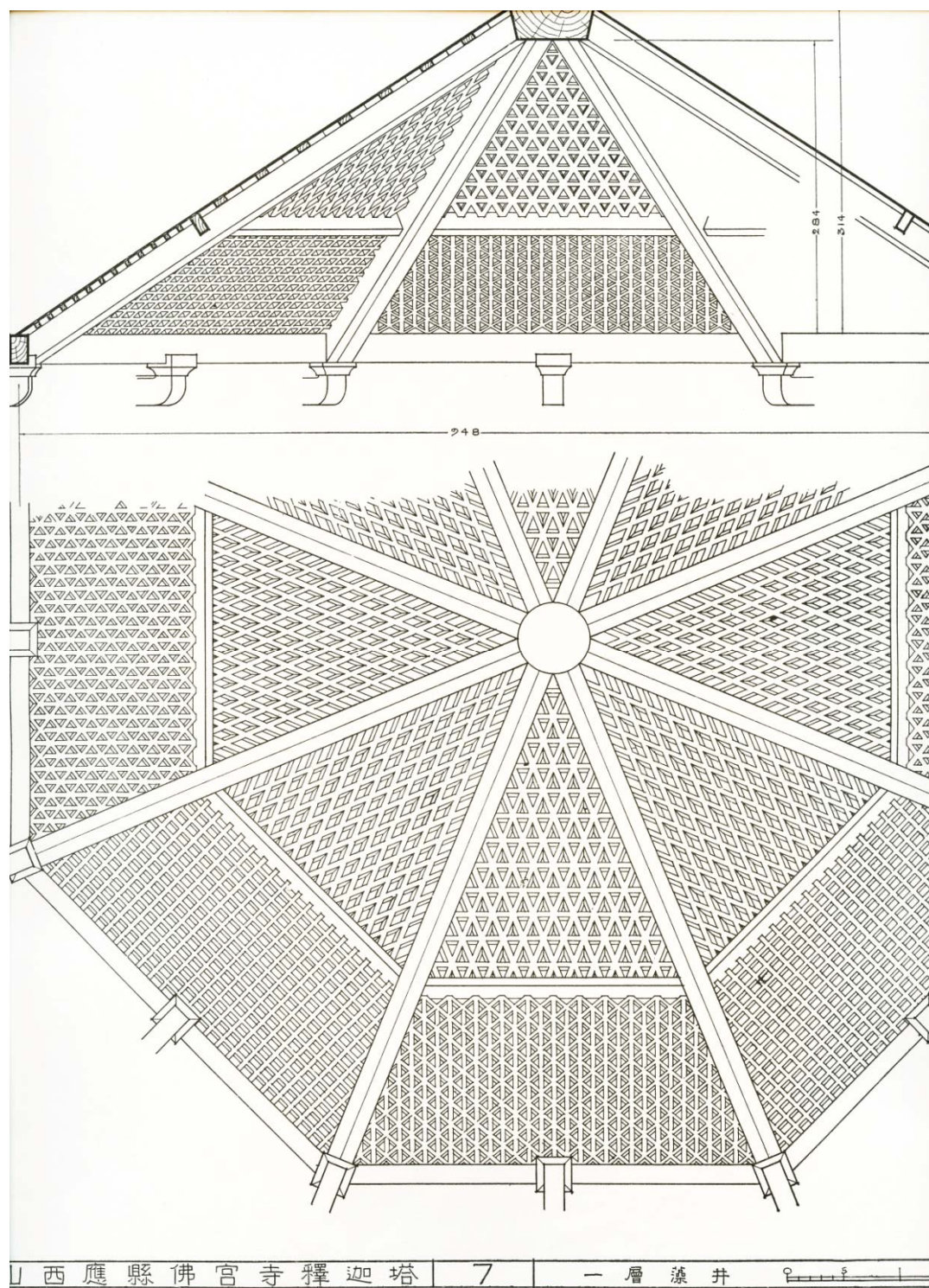


Fig. 4. Plan (mirrored) and Section of the *Zaojing*

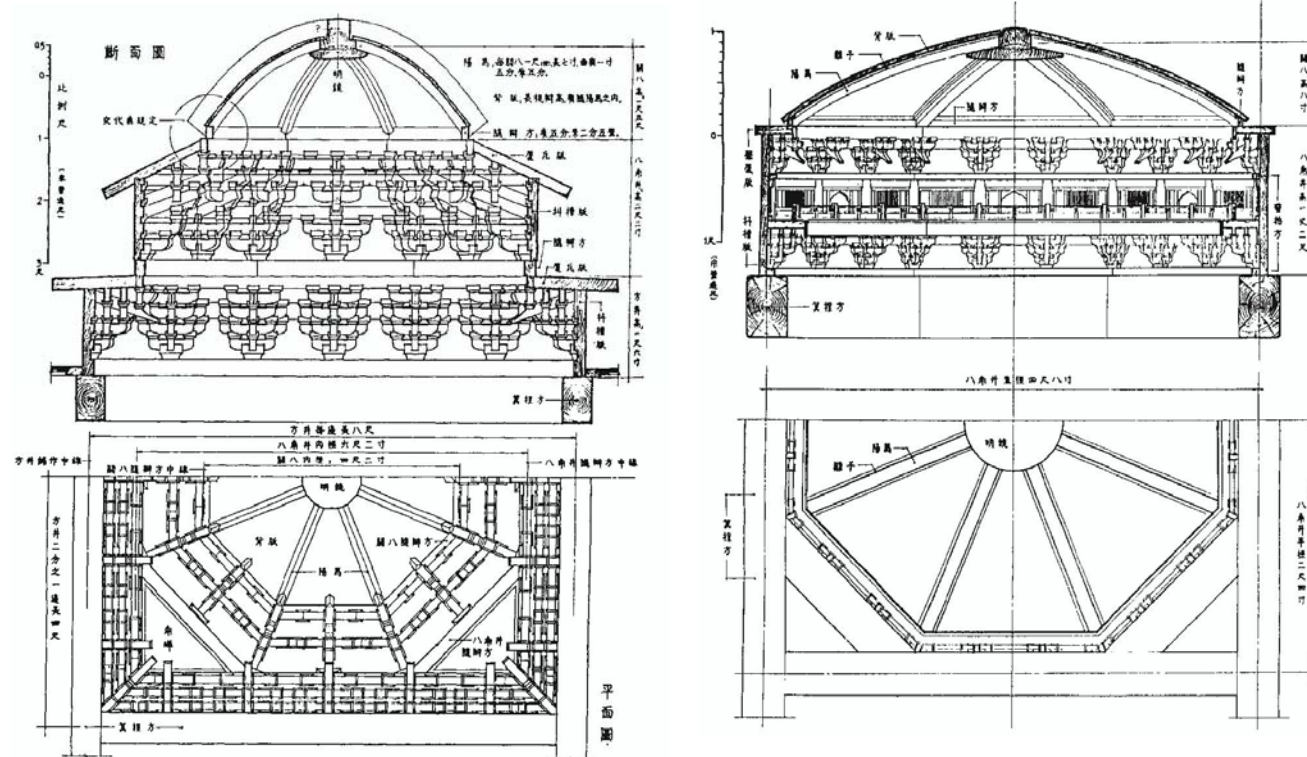


Fig. 5. Douba Zaojing and Xiao Douba Zaojing



Fig. 6. A zaojing in the Han Dynasty tomb in Yinan, Shandong

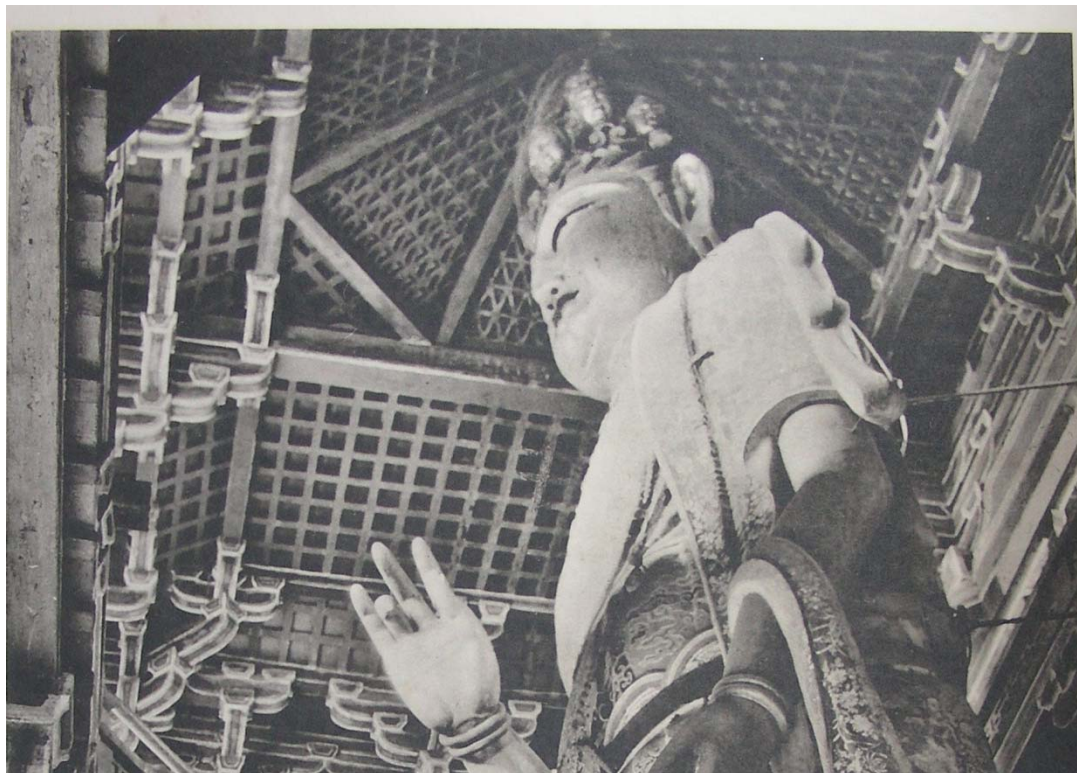


Fig. 7. *Zaojing* in the Avalokitesvara Pavilion in Jixian

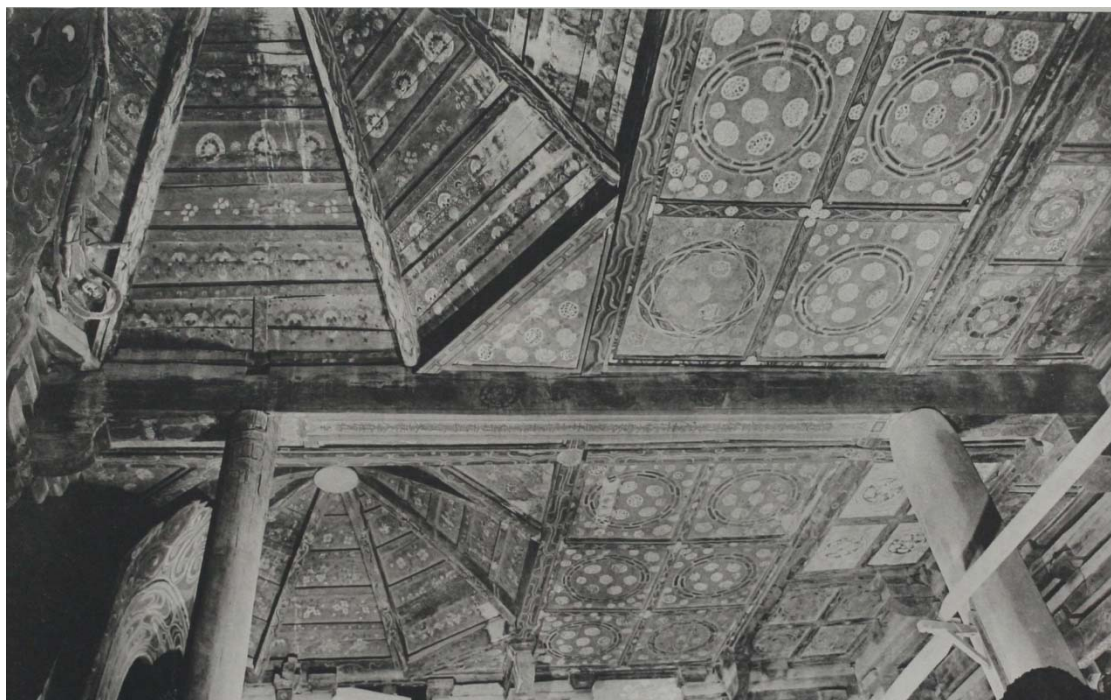


Fig. 8. *Zaojing* in the Library Hall of Lower Huayansi in Datong

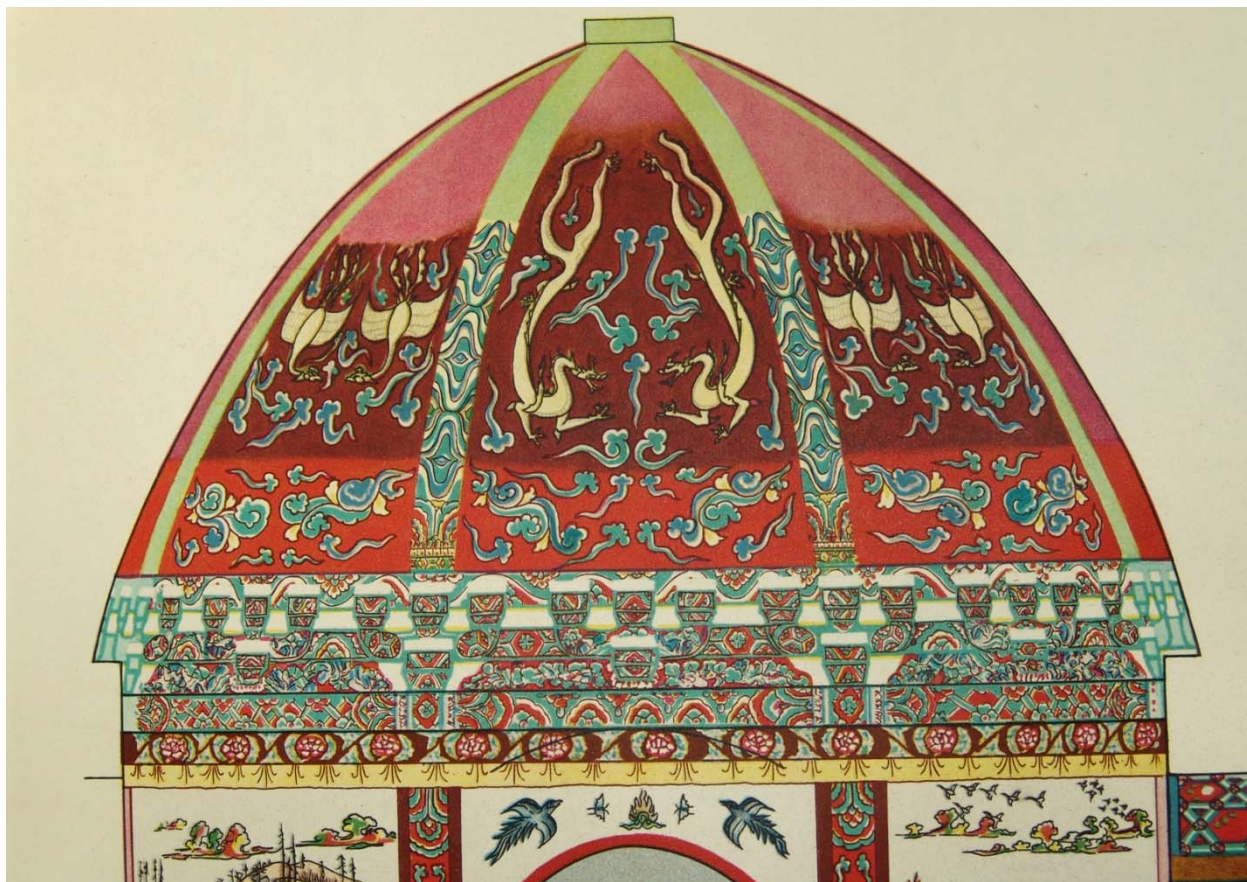


Fig. 9. Dome of the central chamber of East Qing Mausoleum, drawing of restored colored paintings

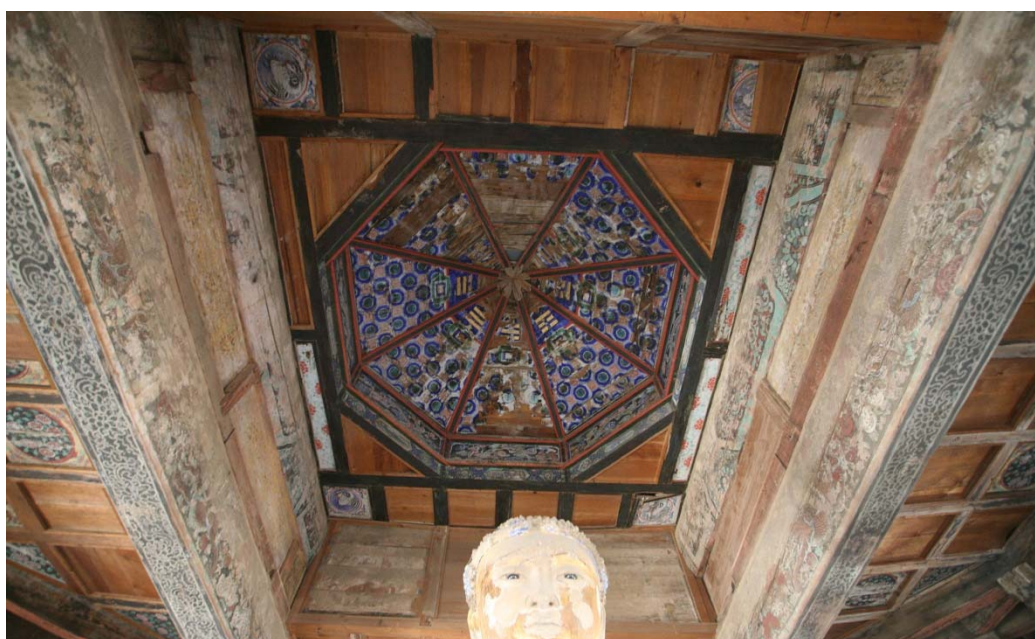


Fig. 10. Zaojing on the fifth floor of the Timber Pagoda

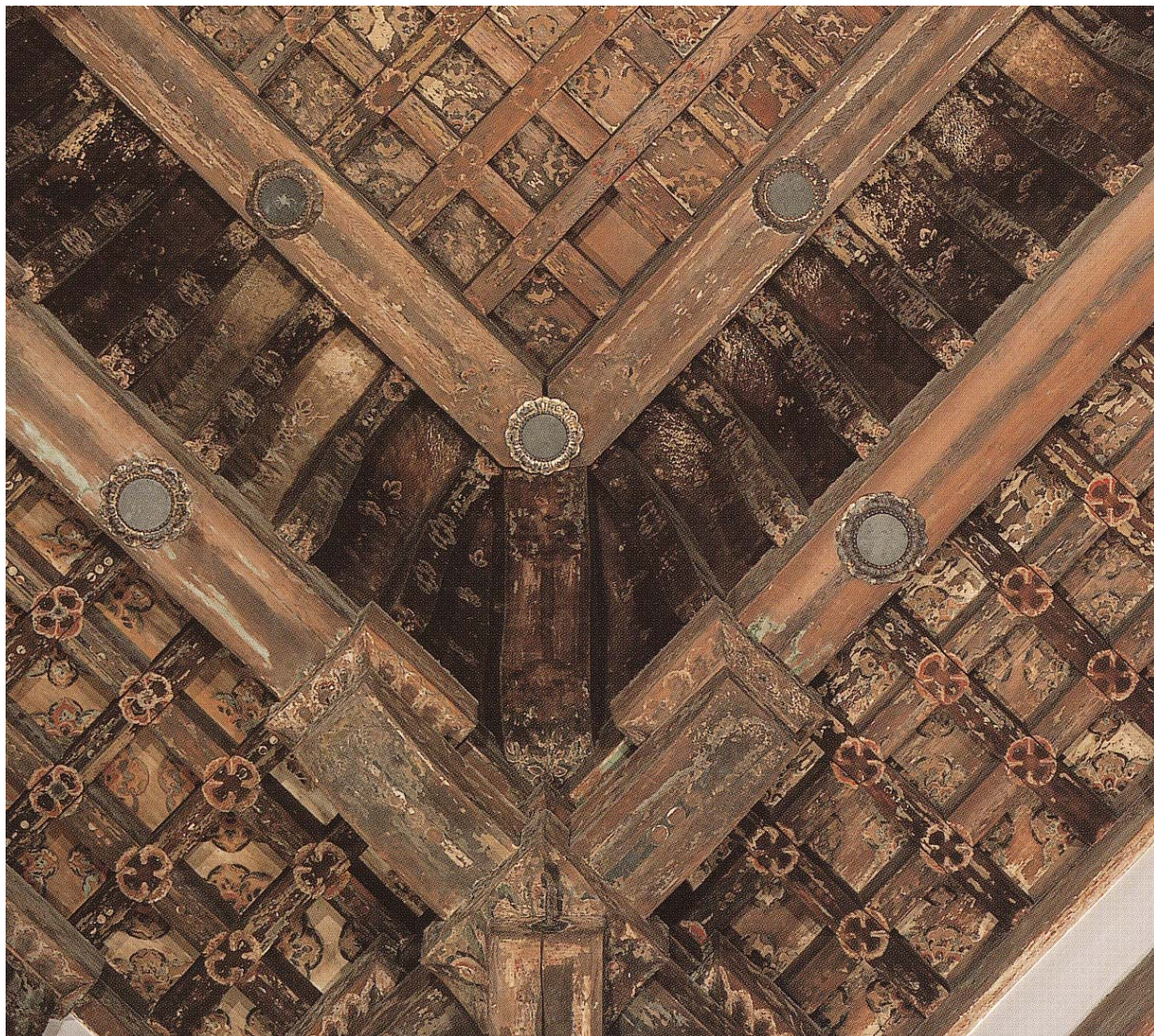


Fig. 11. Ceiling of the Phoenix Hall of Byōdō-in



Fig. 12. *Yangma* painted with the net-mesh pattern



Fig. 13. Beam at the bottom of the *zaojing* (the one on the southwest side)



Fig. 14. Mandorla of Buddha painted with the net-mesh pattern and the diamond pattern. Library Hall, Lower Huayansi.



Fig. 15. Net-mesh pattern in the Main Hall of Fengguosi



Fig. 16. Buddha on the east wall surrounding the statue on the first floor



Fig. 17. One set of brackets in Fengguosi



Fig. 18. Top: *suibanfang* beam on the east side. Bottom: *suibanfang* beam on the northwest side.



Fig. 19. The simplest type of net-mesh pattern in Fengguosi

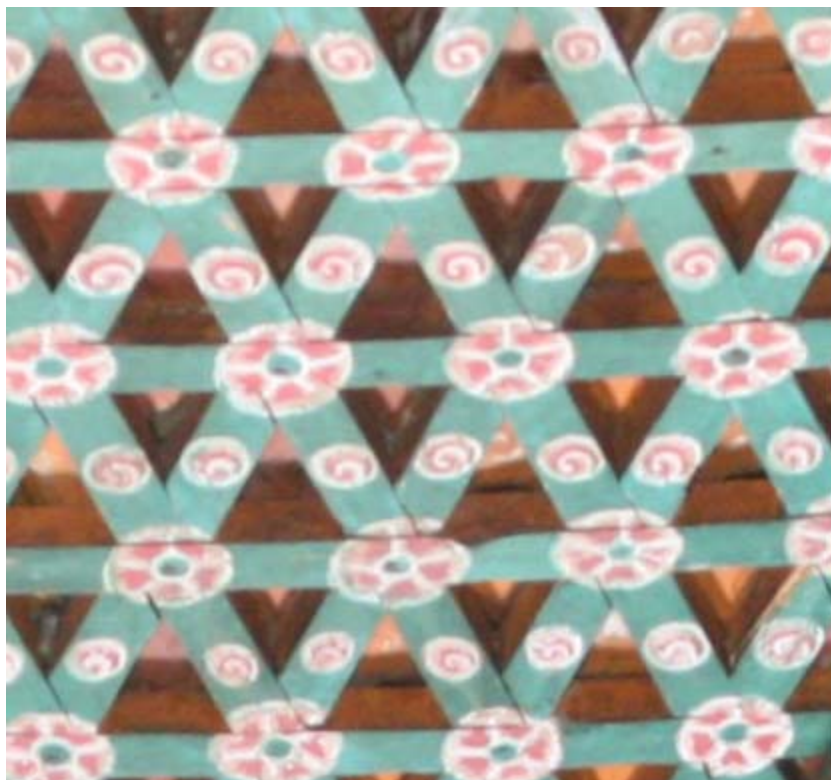


Fig. 20. North portion of the inner ring of the *zaojing*



Fig. 21. West portion of the inner ring of the *zaojing*



Fig. 22. Northeast portion of the inner ring of the *zaojing*



Fig. 23. Cardinal portion of the outer ring of the *zaojing*



Fig. 24. Intercardinal portions of the outer ring of the *zaojing*



Fig. 25. Painted tunnel vault of the west passages of the central chamber of the East Qing Mausoleum



Fig. 26. Patterns in the central chamber of East Qing Mausoleum



Fig. 27. Patterns in the antechamber of East Qing Mausoleum



Fig. 28. Restored drawing of colored painting on the octagonal pillar attached to the east wall in the antechamber of Li Bian's mausoleum



Fig. 29. Colored paintings in the south wall of the antechamber of Baisha Tomb No.1



Fig. 30. Colored paintings of *pingqi* in Mogao Cave 188



Fig. 31. Details of a restoration of the colored paintings on the *zaojing* of the Timber Pagoda

(left to right: South and southeast portions of the inner ring; East portion of the inner ring; South and Southeast portions of the outer ring)

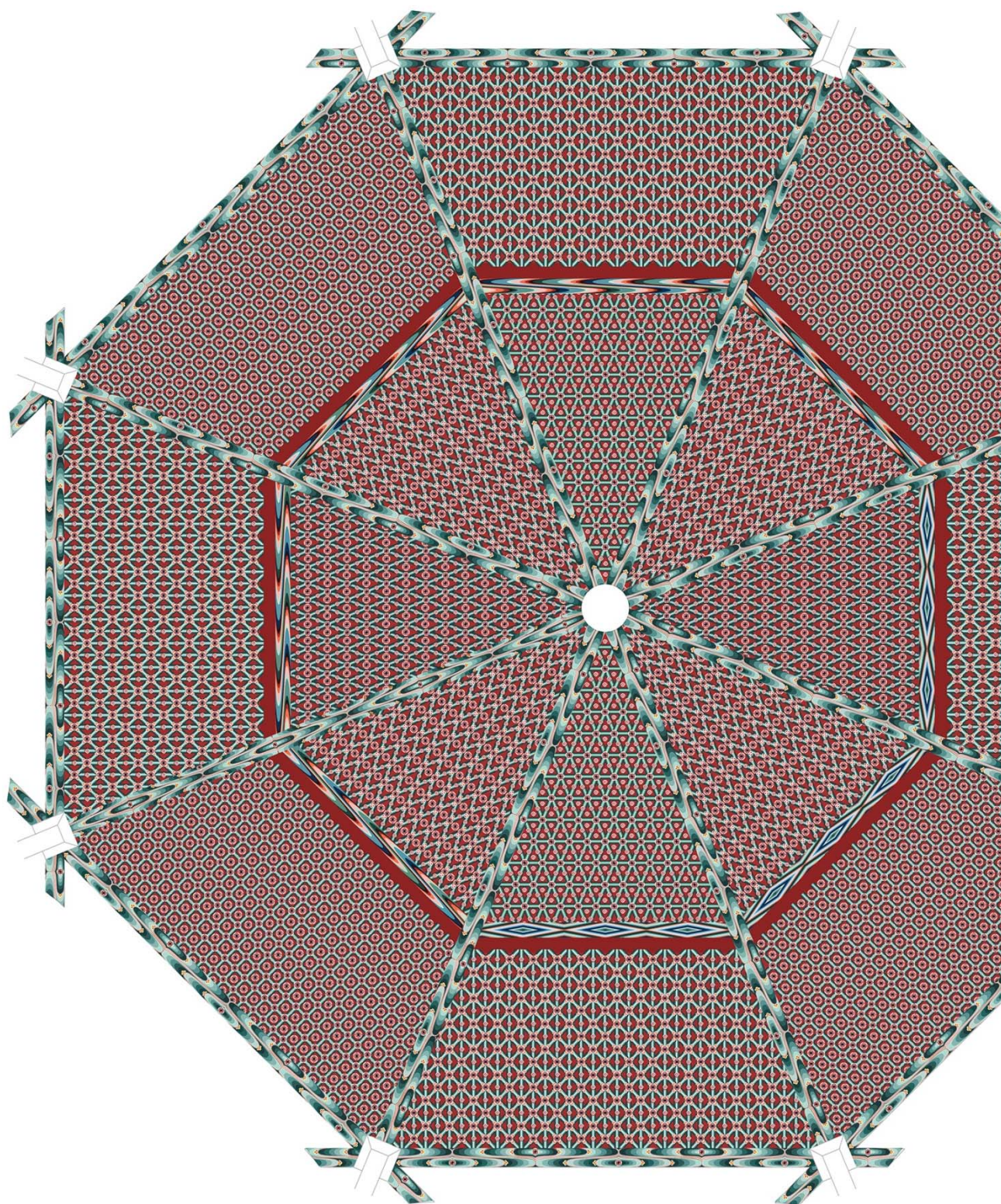


Fig. 31. Drawing of a restoration of the colored paintings on the *zaojing* of the Timber Pagoda

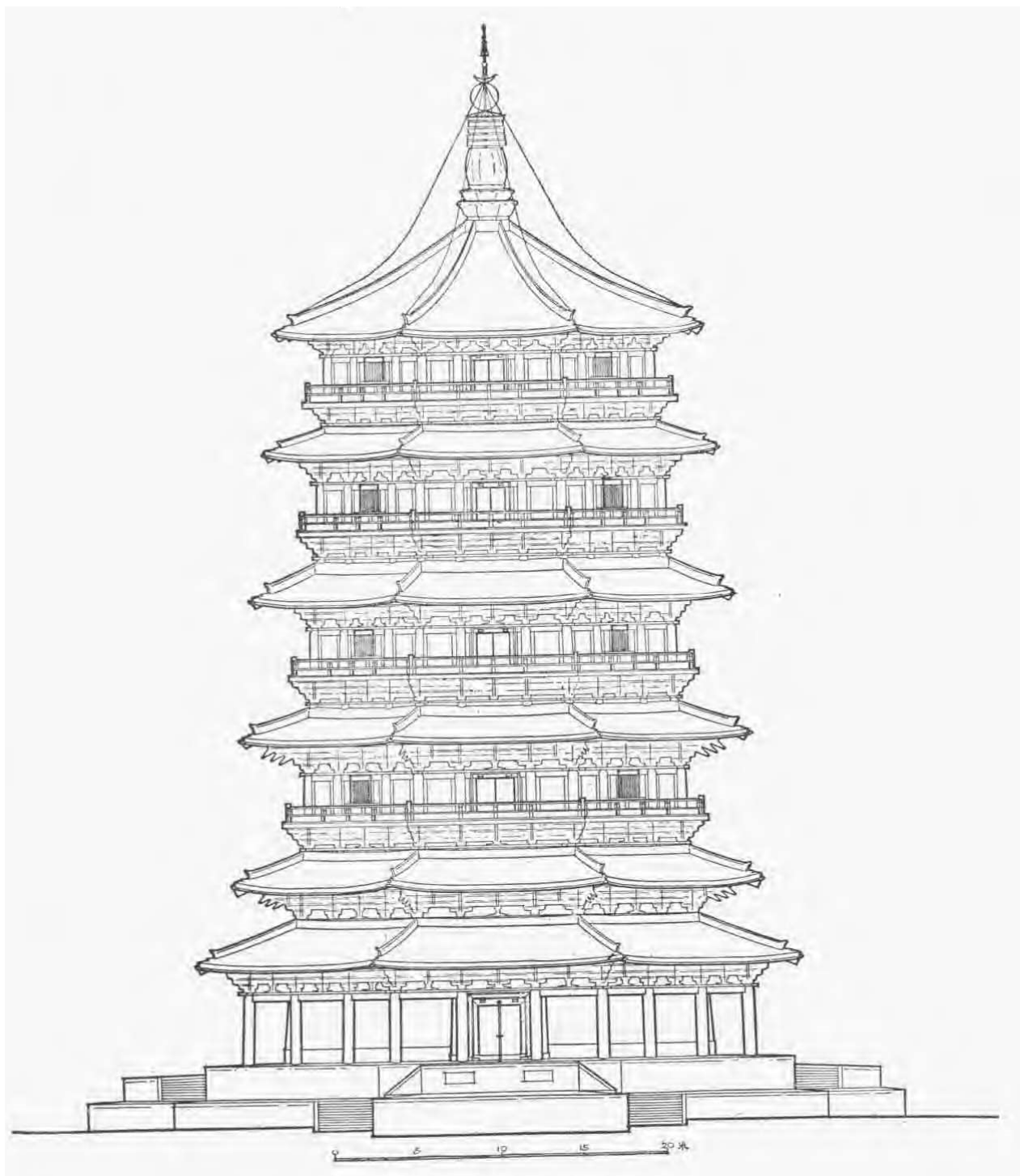


Fig. 32. Imagined original state of the Timber Pagoda



Fig. 33. A view of the south door to the inner groove of the first floor of the Timber Pagoda

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GLOSSARY

<i>Pinyin</i>	Chinese characters	Explanatory notes
<i>cao</i>	槽	column grid
<i>chenggan</i>	枳桿	suspending column used at the center of a coffered ceiling structure
<i>chuilian</i>	垂蓮	lotus suspended upside-down
<i>chuilianzhu</i>	垂蓮柱	small suspended column
<i>diaohuayunjuan</i>	彫華雲卷	ornamental carving for the apex of <i>douba zaojing</i>
<i>dingxin</i>	頂心	apex of <i>zaojing</i>
<i>dou</i>	斗	general term for a bearing block
<i>dousi</i>	鬪四	laternendecke ceiling
<i>fujie</i>	副階	subordinate structure or corridor attached to the core building
<i>gong</i>	拱	general term for a bow-shaped bracket
<i>mingjing</i>	明鏡	mirror installed under the apex of <i>douba zaojing</i>
<i>ping'an</i>	平闇	flat, coffered ceiling consisting of a comparatively small grid. See: <i>pingqi</i>
<i>pingqi</i>	平棊	a flat, coffered ceiling consisting of a comparatively large grid framework with a surrounding frame and panels shaped like squares, rectangles, or polygons that are artistically decorated
<i>shidi</i>	柿蒂	one of the nine categories of patterns used in colored paintings
<i>suibanfang</i>	隨瓣方	at the bottom of a <i>zaojing</i> is a square well, the corners of this square well are crossed using this kind of beam so that an octagon can be formed
<i>suowen</i>	瑣文	one of the nine categories of patterns used in colored paintings
<i>wucaibianzhuang</i>	五彩偏裝	“five colors overall”, the most complicated and

		effort-demanding system of colored paintings in <i>Yingzao Fashi</i>
<i>yangma</i>	陽馬	eight slanting beams used for the eight corners of a <i>douba zaojing</i>
<i>zaojing</i> (<i>douba zaojing</i>)	藻井 (鬩八藻井)	domed coffered ceiling