Formation of Symmetrical Layout of Bell and Drum Towers in Chinese Buddhist Temples

Seung-Wook Hyun*1

Senior Researcher, Ph.D., National Research Institute of Cultural Heritage, Korea

Abstract

The Bell and Drum Tower system is the most representative of the symmetrical temple pavilions of the Ming and Qing Dynasties. This system existed in palaces and cities before appearing in Buddhist temples. Currently, research on the formative background of the Bell and Drum Towers is hard to find. This study aims to examine the formative background of this layout system. The results are as follows:

Firstly, the abolition of the Bell and Drum Tower system within palaces allowed for the Towers to be built freely in cities and temples. This system eventually became the most widely used layout scheme for cities and temples in the Ming and Qing Dynasties. Secondly, the evolution of the symmetrical layout in Buddhist temples eventually became finalized as the Bell and Drum Towers. In the process, the Bell Tower changed pairs multiple times, in chronological order: the Sutra Tower, the Revolving Sutra Tower, other Pavilions, and finally, the Drum Tower.

Keywords: Bell Tower; Drum Tower; symmetrical layout; temple layout; Chinese Buddhist temple

1. Introduction

1.1 Objectives and Significance

The bells and drums of ancient Chinese Buddhist temples originated from India’s Ghanta, and were used to: indicate the time, gather crowds, and announce the beginning of preaching.1 However, the emergence of Bell Towers (鐘樓) and Drum Towers (鼓樓) within Buddhist temples happened much later on.

The Bell Towers and Drum Towers of Chinese Buddhist temples are the most representative symmetrical temple pavilions of the Ming and Qing Dynasties. (Fig.1.) This symmetrical layout that still exists today is a unique system not found in Korean or Japanese temples of the same era. Since the early Ming Dynasty, the symmetrical layout of the two Towers has existed for more than six centuries. What were the environmental factors that allowed this system to persist for such a long time?

Actually, before the appearance of these Towers in Buddhist temples, The Bell and Drum Towers already existed in palaces and cities. However, at present, there is little research regarding the systematic relationship between them, as well as the formative background of the Bell and Drum Towers in temples. As such, this paper will investigate the formative background of the symmetrical layout of Bell and Drum Towers in Chinese Buddhist temples, thereby facilitating a better understanding of Chinese temple layouts.

1.2 Methodology

As aforementioned, research related to the symmetrical layout of Bell and Drum Towers is scarce. The concept has been limited to merely being mentioned in Buddhist architecture related books and
journals. For example, Zhang Shi-Qing stated the possibility that the Bell and Drum Towers of temples are an imitation from palaces. (Zhang, 2001) Others, such as Yan Chang-Hong commented that the Towers originated from ancient cities. (Yan, 1997)

Current research is looking for the Towers’ origin in palaces and cities, but has been unable to agree on a conclusion, thus the need for more convincing research into the area.

However, there have been no attempts made in looking within Buddhist temples for the formative background of the symmetrical layout of Bell and Drum Towers. Considering the fact that the Bell evolved while maintaining symmetry with other buildings, the changes to the symmetrical layout within the temples is a significant aspect of interest in this article.

As such, in this paper, the formative background of the Bell and Drum Towers were separated into external and internal factors. In chapter 2, the changes in layout of the palaces and cities will be investigated while in chapter 3, the changes within the Buddhist temples are studied. Finally in chapter 4, the findings will be examined, leading to a conclusion.

2. Bell and Drum Towers in Palaces and Cities

2.1 Symbolic Meanings of Bell and Drum

In ancient China, bells and drums were widely used in memorial services, banquets, wars, etc. Generally, the bells and drums were used as a pair, having symbolic meanings.

According to traditional Chinese notions, the bells and drums are closely related to Rites, the Eight Trigrams, direction, and negative and positive. For example, the bells represent 'west (西)', 'fall (秋)', 'metal (金)', 'negative (陰)', and 'stop (止)'. While on the contrary, the drums stand for 'east (東)', 'spring (春)', 'leather (革)', 'positive (陽)', and 'move (動)'. (Fig.2.)

Ancient Chinese architecture naturally reflected these notions, leading to the placement of drums on the east, and bells on the west of palaces.

| Bell     | Drum    |
|----------|---------|
| West     | East    |
| Fall     | Spring  |
| Metal    | Leather |
| Negative | Positive|
| Stop     | Move    |

Fig.2. Symbolic Meanings of Bell and Drum

2.2 In Palaces

As mentioned above, the bell and drum were used in various events and ceremonies held in palaces. This can be confirmed with various literatures from the Qin and Han Dynasties to the Northern-and-Southern Dynasties.

According to records on the Qin Xianyang Palace (咸陽宮) and the Han Changle Palace (長樂宮), words such as 'Bell Stand (鐘簴)', 'Bell and Drum (鐘鼓)', and 'Bell's room (鐘室) appear. Archives on the Han Weiyang Palace (未央宮) contain phrases such as "The bell in front of the Hall rang itself". At the time, bells were used quite frequently in palaces, but the Bell Tower itself had not yet appeared.

Records show that the Bell Towers appeared in palaces in the Northern-and-Southern Dynasties. A record on the palace of the Southern Qi Dynasty shows a 'West Bell Tower (西鐘樓). Although there is no specific mention, it is quite possible that there was a matching 'East Bell Tower' or 'East Drum Tower'. Records show that a bell hung from the high tower located on the left of the Taiyang Gate (太陽門) in the palace of the Southern Liang Dynasty. The Northern Wei Luoyang Palace (洛陽宮) also mentions a Bell Tower within the palace. Yet, none of these documents mention a Drum Tower.

The first instance of the symmetrical layout of the Bell and Drum Towers within a palace is during the Sui Dynasty. Later, this continues on into the Tang, Song, Jin, and Yuan Dynasties. The Bell and Drum Towers were placed on either side of the courtyard in front of the main Hall. Literature shows that the symmetrical Bell and Drum Towers existed in the Sui Luoyang Qianyang-dian (乾陽殿), Tang Chang'an Taiji-dian (太極殿) and Hanyuan-dian (含元殿), Northern Song Dongjing Daqing-dian (大慶殿) and Wendian (文德殿), Jin Zhongdu Renzheng-dian (仁政殿), Jin Bianjing Longde-dian (隆德殿), and Yuan Dadu Daming-dian (大明殿). (Fig.3. ~ 6.)

Fig.3. Bell and Drum Towers of Taiji Palace in Tang (Fu, 2009)

Fig.4. Bell and Drum Towers of Dongjing Palace in Northern Song (Guo, 2009)
Especially, the symmetrical layout of the Yuan Dadu Palace (大都) is peculiar. This palace has the opposite orientation from other previous palaces. Instead of placing the drum on the east and the bell on the west, this palace placed the Bell and Drum Towers on the east and west, respectively.

This method of placement brings about a significant change in the Ming Dynasty. In Zhongdu (中都), Ming Dynasty's first capital, the Bell and Drum Towers were placed outside the palace. (Fig.7.) Later in Ming Nanjing (南京) and Beijing (北京), the internal placement of the Bell and Drum Towers disappeared.⁹

2.3 In Cities

In ancient cities, bells and drums were installed in market towers, watchtowers, or the city gates to indicate time or control traffic flow.

Such facilities can be seen in Carving Stone and mural painting of the Eastern Han. The Carving Stone Shisi (市肆) in Sichuan Province shows a cross-shaped road with a two-story market tower in the center. In mural paintings Jianzhu-tu (建築圖) in Hebei Province, a high-rising watchtower can be seen. In both towers, a drum was also installed and the drums were most likely used as a signal to open and close the market or town gates. (Fig.8.)

The specific use of bells and drums in cities is detailed in records on the Eastern Han Luoyang City. According to these records, the bell was used to impose a curfew while the drum was used to lift a curfew.¹⁰

Records show that in Northern Wei Pingcheng (平城) and Yanzhou (兗州), Drum Towers were installed.¹¹ A drum was also installed in the Chengtian Gate (承天門) of Tang Chang'an City to control the gates and the flow of traffic throughout the city. (Zhao, 2006) During the Song Dynasty, the structure of the city itself changed, eliminating the need for the Lifang (里坊). Therefore, the curfew disappeared, and the bells and drums lost their roles, and stopped further development.

Later, in the Yuan Dynasty, Bell and Drum Towers began to be constructed symmetrically in cities. One difference in Yuan Dadu is that the two Towers did not form an east-west symmetry, but rather a north-south symmetry. This form continues on into the Ming and Qing Beijing. (Fig.9.)

Yet, in the Ming and Qing era, other provincial cities almost formed east-west or west-east symmetries. (Fig.10.) But according to the size and influence of a city, in some cases, only one of the Bell and Drum Towers was constructed.
2.4 Chapter Conclusion

This chapter focused on the layout change of Bell and Drum Towers in palaces and cities. The findings are detailed in 4 steps below:

1) Qin and Han to Northern-and-Southern Dynasties: In this era, the Bell Tower and Drum Tower do appear in palaces and cities, but do not form a pair with each other.

2) Sui and Tang to Song and Jin Dynasties: The drum on the east, and bell on the west symmetrical layout first appears and continues onto the Jin Palace. However, this layout does not appear in cities yet.

3) Yuan Dynasty: In this period, the traditional placement of the bell and drums is reversed, placing the Bell Tower in the east and the Drum Tower in the west. On the other hand, the Bell and Drum Towers first form a symmetrical pair in cities, but form a north-south pair rather than an east-west pair.

4) Ming and Qing Dynasties: During this time, the symmetrical placement of Bell and Drum Towers in palaces is abolished, making the construction of these Towers more accessible. Consequently, new forms of Bell and Drum Tower placement in cities is disseminated and further developed.

3. Changes of Symmetrical Layout in Temples

3.1 Bell and Sutra Towers

The placement of Bell and Sutra Towers (經藏) was very important in early Buddhist temples. Today, the symmetrical placement can be confirmed through documents from the Tang and Song Dynasties as well as the Mural Paintings of Dunhuang Mogao Grottoes.

According to records on the Tang Quanzhou Kaiyuan Temple (開元寺), around the year 897, the Bell Tower was constructed to the northeast of the main courtyard while the Drum Tower was placed to the northwest. The symmetrical placement of the Bell and Drum Towers can also be confirmed in another document on the Tang Chang'an Baoshou Temple (保壽寺).¹²

Daoxuan (道宣), a monk from the Tang Dynasty described in Guanzhongchuangli Jietantujing (關中創立戒壇圖經), which is an illustration for the Precept Platform Creating in Guanzhong, the ideal Buddhist temple. In this illustration, the Bell Tower was placed to the east of the seven-story pagoda, while the Sutra Tower lay to the west. (Fig.11.)

3.2 Changes of Bell and Drum Towers in Ming and Qing Dynasties

This particular method of placement can be confirmed in various texts of the Northern Song. For example, the Baoyun Temple (寶雲寺), Xiangguo Temple (相國寺), Puzhaowang Temple (普照王寺), and Chongsheng Temple (崇聖寺) all have records indicating that Bell
and Sutra Towers were constructed.\textsuperscript{13}

The placement of Bell and Sutra Towers can also be seen in the Mural Paintings of Dunhuang Mogao Grottoes. (Fig.12.) This placement first appears in murals from the High Tang (705-781) and becomes more frequent in the Middle and Late Tang era (781-906). Consequently, it can be deduced that this placement scheme was prevalent in the 8th and 9th centuries. Later on, this method continues through the Five Dynasties and into the Northern Song era.

3.2 Bell and Revolving Sutra Towers

The Revolving Sutra Tower (輪藏) is a kind of Sutra Tower. It has a revolving sutra cabinet within the building. This style was first introduced in the Southern Liang Dynasty, but gained popularity after the Song Dynasty. The Zen Buddhist temples of the Southern Song and Yuan era especially adapted this style. The change from the original Sutra Tower to the Revolving Sutra Tower seems to have taken place during this era. (Zhang, 2001)

According to literature, Baolin Chanyuan (寶林禪院) of the Northern Song era had a middle gate in front of the Buddhist hall. The Bell Tower lay to the left while the Revolving Sutra Tower was placed to the right.\textsuperscript{14} The Gozan Jissatsu-zu (五山十剎圖), which describes Zen Buddhist temples of the Southern Song era, shows that the Bell and Revolving Sutra Towers were placed symmetrically in the Lingyin Temple (靈隱寺). (Fig.14.)

The symmetrical layout of the Bell and Revolving Sutra Towers can be seen mostly in Zen Buddhist temples of the Song and Yuan era.

3.3 Bell Tower and Other Pavilions

In the Zen Buddhist temples of the Song and Yuan Dynasties, the pavilion underwent significant development. Various new forms of pavilions such as the Guanyin Pavilion (觀音閣), Huayan Pavilion (華嚴閣), and Sengjia Pavilion (僧伽閣) were introduced. These pavilions formed a line of symmetry along the axial line and resulted in several different forms.

When the Guangzhou Xinhui Dizangyuan (地藏院) was reconstructed in 1038, the Bell Tower and Guanyin Pavilion were placed symmetrically.\textsuperscript{16} Also, the Tiantong Temple of the Southern Song era, which is depicted in the Gozan Jissatsu-zu, shows an east-west symmetry between the Bell Tower and Guanyin Pavilion.
In the Danxia Chanyuan (丹霞禅院), which was completed in 1111, Northern Song, the Bell Tower and Huayan Pavilion are symmetrical. The Huayanyuan (华严院) which was finished in 1115 shows symmetry between the Bell Tower and the Sengjia Pavilion.

The symmetrical layout of the Bell Tower and other pavilions, like that of the Bell and Revolving Sutra Towers, became prevalent in Zen Buddhist temples of the Song and Yuan era.

3.4 Bell and Drum Towers

In the temples of the Song and Yuan era, the Drum Towers did not appear. The Drum Towers made their first appearance in Chinese Buddhist temples in the early Ming dynasty. In Nanjing, the Drum Tower appeared in a Buddhist temple. This event is detailed in the Jinling Fanchazhi (金陵梵刹志). This book, known as the Gazetteer of the Buddhist temples of Nanjing (Jingling), has records on 176 Buddhist temples. Of these, only 10 show a symmetrical layout of bell and drum towers. (He, 2000)

During the Ming Dynasty, the Bell Tower was often constructed without a symmetrical partner. Therefore, the Bell Tower either formed a pair with a Drum Tower or was simply installed alone. As such, this period can be seen as a transitional period, leading to the establishment of the symmetrical layout of the Bell and Drum Towers.

Later, after Beijing became the capital, the symmetrical layout of the Bell and Drum Towers became widespread, making it the standard arrangement technique.

This can be also understood by looking at the development of the Buddhist temple. Temples from the Song and Yuan were oriented towards a two-story Pavilion (楼阁), while the temples of the Ming and Qing were single-story Hall (殿堂) oriented. In the Ming Dynasty, most of the pavilions were changed to Halls, and in this process, the Bell and Drum Towers remained as symmetrical pavilions.

3.5 Chapter Conclusion

This chapter discussed the alterations of the symmetrical layout of the Bell Towers within Buddhist temples. According to the era, there are three main methods of symmetrical placement.

1) Northern-and-Southern Dynasties to Northern Song: In this period, the Bell and Sutra Towers arrangement is most common. This method is not exclusive to China, and can also be observed in the early temples of Korea and Japan.

2) Northern Song to Yuan Dynasty: The Bell and Revolving Sutra Towers are the prevalent method of placement in this era. Yet, during this time, various other pavilions were also used to form a pair with the Bell Tower. This reflects the pavilion-oriented construction of the Zen temple's form during the Song and Yuan Dynasties.

3) Ming and Qing Dynasties: This period saw the appearance of the Drum Tower within Buddhist temples. The Bell and Drum Towers format remains the characteristic method of symmetrical placement of Buddhist temples in China to this day.

To summarize the above process, prior to the Ming Dynasty, the symmetrical layout of the Bell Tower and Sutra Tower (including the Revolving Sutra Towers) continued for a long time. However, in the Ming and Qing dynasties, the sutra was moved to the sutra depository (藏经阁), located in the northernmost part of Buddhist temples, along the central axis. The now vacant space, previously occupied by the sutra tower, was filled by the Drum Tower, which resulted in the symmetrical layout of the Bell and Drum Towers.

4. Conclusion

This paper explains how the layout of the Bell and Drum Towers in Chinese Buddhist temples was formed.

The first aspect consists of external factors, such as the abolition of the Palace Bell and Drum Tower.
System. The removal of this system allowed for the Bell and Drum Towers to be constructed freely in other places. In the Ming and Qing Dynasties, this system became the de facto layout scheme for cities and temples throughout China.

The second focus was on the internal factors, concerning the changes in the layout of the Bell Tower and other buildings in Buddhist temples. The layout originally started with the "Bell and Sutra Towers", evolving into the "Bell and Revolving Sutra Towers", then the "Bell Tower and other Pavilions" and finally the layout was finalized as the "Bell and Drum Towers". In summary, as the location for the storage of scriptures changed, the Drum Tower took the place of the Sutra Tower, which was symmetrically placed with respect to the Bell Tower.

The symmetrical layout of the Bell and Drum Towers of Buddhist temples was heavily influenced and shaped by various internal, as well as, external factors since the beginning of the Ming Dynasty.

References
1) Cultural Relics Institute Hebei Province (2000) Ancient Mural Paintings in Hebei. Beijing: Cultural Relics Press.
2) Fan, G. X. (2009) History of Chinese Ancient Architecture Vol. 4. 2nd ed. Beijing: China Architecture and Building Press.
3) Fu, X. N. (2009) History of Chinese Ancient Architecture Vol. 2. 2nd ed. Beijing: China Architecture and Building Press.
4) Gao, W. (1987) Han Carving Stone in Siqian. Shanghai: Shanghai People's Fine Arts Publishing House.
5) Ge, Y. L. (2011) Jinling Fuancha Zhi. Nanjing: Nanjing Publishing House.
6) Gui, D. H. (2009) History of Chinese Ancient Architecture Vol. 3. 2nd ed. Beijing: China Architecture and Building Press.
7) He, X. R. (2000) Study on the Layout of Sutra and Bell Towers in the Chinese Buddhist Temples from the Northern and Southern Dynasties to the Sui and Tang Dynasties. Huazhong Architecture, 80(10), pp.136-141.
8) Hyun, S. W. (2014) A Study on the Architectural Form and Layout of the Bell and Sutra Towers in the Mural Paintings of Dunhuang Mogao Grottoes. Journal of the Architectural Institute of Korea, 30(4), pp.151-159.
9) Hyun, S. W. (2000) History of Korean Architecture. Seoul: Korea University Press.
10) Ota, H. (1979) Architectural Components in Nantes Rokumune Temples. Japanese Temple Art Collection Vol. 2. Tokyo: Shoeisha.
11) Shi, P. T. (2002) Dunhuang Grottoes Collection Vol. 5. Hongkong: Commercial Press.
12) Wang, J. Y. (1992) Zhongdu City of Ming Dynasty. Beijing: Zhonghua Book Company.
13) Xiao, M. (2002) Studies on the Dunhuang Architecture. Beijing: China Machine Press.
14) Yan, C. H. et al. (1997) Research on the Drum Culture in China, Nanning: Guangxi Education Publishing House.
15) Zhang, S. Q. (2000) Wushanshichatu and Zen Buddhist Temples of Jiangan. Nanjing: Southeast University Press.
16) Zhang, S. Q. (2001) Buddhist Temples of Jiangnan in China. Wuhan: Hubei Education Press.
17) Zhao, Z. (2006) Discussion of the Street Drum of Chang'an City in Tang Dynasty. Journal of Shanghai Normal University, 15(3).
