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We Do Not Know Much about Goryeo Dynasty Architecture

Introduction

The Goryeo dynasty not only bears the characteristics of the Middle Ages but also serves as a bridge connecting the ancient and modern times. This attribute is observed in various areas such as society, culture, and art, and architecture is no exception.

However, we do not know much about the architecture of the Goryeo dynasty. You may have heard about the beautiful entasis constituting the Muryangsujeon Hall of Buseoksa Temple when you were middle or high school students. Anyone who majored in architecture or is interested in traditional architecture must know that constructions of the period also include the Geungnakjeon Hall of Bongjeongsa Temple, the Daeungjeon Hall of Sudeoksa Temple, and the Sammun Gate of Imyeonggwan Guesthouse in Gangneung. However, this is all. Including them, there are less than 10 Goryeo buildings remaining, and some of them are in North Korea so that South Koreans cannot easily visit.

As seen in Table 1 below, most of the extant Goryeo buildings were established in the 14th century. In addition, they, excluding the Sammun Gate, are all Buddhist constructions. Can these buildings, constructed during the last 100 years or so of the Goryeo dynasty that lasted for about 470 years, fully represent the period? Can the palaces, government offices, and houses of the Goryeo dynasty are explained with only those few remaining Buddhist buildings? That is why I say we do not know much about Goryeo dynasty architecture.

References for Goryeo Dynasty Architecture

There are references that help to assume the architecture of the Goryeo dynasty in addition to the extant buildings.

Buddhist paintings created in that period, such as paintings of the paradise of Amitabha 觀經變相圖, depict Buddhist architecture relatively in detail. However, Buddhist paintings were drawn by imitating past icons, and therefore, it is difficult to believe that buildings in those paintings were established in the Goryeo dynasty. Furthermore, the extant Goryeo Buddhist paintings cannot represent the entire period since most of them were created in the 14th century.

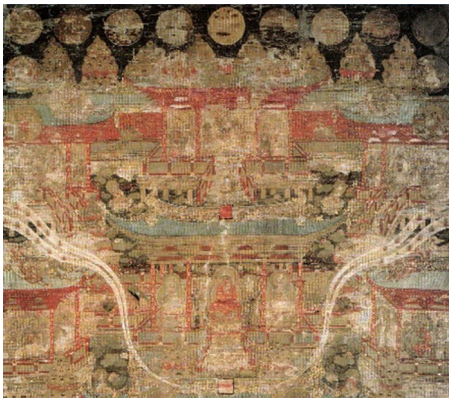
Stone pagodas such as the Stupa of State Preceptor Jigwang of the Beopcheosa Temple site in Wonju and craftworks such as Gilt-bronze Miniature Pagoda excavated from the Gaetaesa Temple site also provide good references for the imagination of wooden Buddhist pagodas of the time. However, they have limitations in that they are Buddhist pagodas, a relatively unique type of architecture, and that pagoda craftworks were created by adapting wooden pagodas of the time into smaller-sized stone or metal ones.

Goryeo architecture also appears in bronze mirrors such as the Bronze Mirror with Dragon, Tree, and Pavilion Designs 靑銅龍樹殿閣文鏡. The back of the mirror is decorated with designs of a dragon, a tree, and a pavilion. Although many similar mirrors have been discovered, they have the same pavilions depicted with three bays on the façade and a hip-and-gable roof. This is the result of imitating icons in mirrors created previously as is the case with Buddhist paintings, and hence, it is impossible to entirely believe that the building in the mirror was constructed in the Goryeo dynasty.

Illustrated Record of the Chinese Embassy to the Goryeo Court in the Xuanhe Era 宣和奉使高麗圖經 written by Xu Jing 徐兢, an envoy of the Song dynasty, also elaborates on palaces, government offices, and temples of the Goryeo dynasty. However, it has limitations in that those buildings were described through the eyes of a foreigner of that time.

Lastly, there are references excavated from the Goryeo Manwoldae Palace site in Kaesong, North Korea. The foundation, cornerstone, and embankment of the palace were identified. From them, determining the scale of the construction is possible, while identifying the exact upper structure is not.

The above-mentioned references are of great help in assuming the architecture of the Goryeo dynasty. However, some references only depict part of a building, leading to limited assumption of overall appearance, while others do not provide certainty that the buildings depicted in them were established in that period. Therefore, those references can only be used as



Painting of Sixteen Meditations in the Paradise of Amitabha (National Museum of Korea 2010, 41)

Stupa of State Preceptor Jigwang of Beopcheosa Temple Site (Korea Heritage Service)

Goryeo Gilt-bronze Miniature Pagoda (Korea Heritage Service)

Bronze Mirror with Dragon, Tree, and Pavilion Designs (National Museum of Korea eMuseum)

Western Building Complex Site of Manwoldae Palace, Kaesong (Digital Archive for the Inter-Korean Joint Excavation of Manwoldae in Kaesong)

Figure 1. References for Assuming Goryeo Architecture

auxiliary sources for assuming the architecture of the time.

Characteristics of the Extant Goryeo Constructions

The extant buildings of the Goryeo dynasty are listed as shown in Table 1 below. This section examines them to identify the characteristics of Goryeo architecture. Such characteristics may belong to the remaining late-Goryeo Buddhist constructions. Even though the architecture of the Goryeo dynasty acts as a bridge connecting the ancient and modern times, few buildings of the preceding United Silla period are left. Therefore, we examine the characteristics of Goryeo architecture through comparison with the following Joseon architecture.

First, when looking at Goryeo architecture through the eyes of a person familiar with buildings of the Joseon dynasty, the most notable are decorative

Table 1. Extant Goryeo Architecture

Name	Year	Size	Complex bracket type	Location
Geungnakjeon Hall, Bongjeongsa Temple	13c	3 bays on the façade, 4 bays on the side	Column-top	Andong, North Gyeongsang Province
Daeungjeon Hall, Sudeoksa Temple	1308	3 bays on the façade, 4 bays on the side	Column-top	Yesan, South Chungcheong Province
Eungjinjeon Hall, Seongbulsa Temple	1327	7 bays on the façade, 5 bays on the side	Multiple	Hwangju, North Hwanghae Province
Bogwangjeon Hall, Simwonsa Temple in Pakchon	1368	3 bays on the façade, 2 bays on the side	Multiple	Pakchon, North Pyongan Province
Bogwangjeon Hall, Simwonsa Temple in Yontan	1374	3 bays on the façade, 3 bays on the side	Multiple	Yontan, North Hwanghae Province
Yeongsanjeon Hall, Geojoam Hermitage, Eunhaesa Temple	1375	3 bays on the façade, 3 bays on the side	Column-top	Yeongcheon, North Gyeongsang Province
Muryangsujeon Hall, Buseoksa Temple	1376	5 bays on the façade, 3 bays on the side	Column-top	Yeongju, North Gyeongsang Province
Josadang Shrine, Bueoksa Temple	1377	3 bays on the façade, 1 bay on the side	Column-top	Yeongju, North Gyeongsang Province
Sammun Gate, Imyeonggwan Guesthouse	14 c	3 bays on the façade, 2 bays on the side	Column-top	Gangneung, Gangwon Province

Geungnakjeon Hall, Bongjeongsa Temple

Daeungjeon Hall, Sudeoksa Temple

Yeongsanjeon Hall, Geojoam Hermitage, Eunhaesa Temple

Muryangsujeon Hall, Buseoksa Temple

Josadang Shrine, Bueoksa Temple

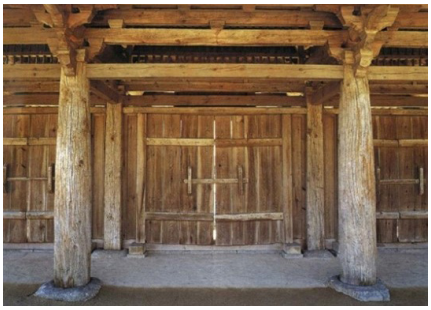
Sammun Gate, Imyeonggwan Guesthouse

Figure 2. Goryeo Architecture Remaining (Korea Heritage Service)

components that reveal the beauty of curves, such as those with jar, plant vine, and oxtail shapes. Decorative components of the extant Goryeo constructions must have been the result of intentional techniques since those buildings have exposed ceilings. Such components make it feel like Goryeo buildings are artworks.

Let me take an example of entasis. While entasis columns can also

be seen in architecture of the Joseon dynasty, those of Goryeo architecture boast curvaceous lines with the greater radius of curvature. Both ends of each bracket arm (*cheomcha*) and bracket wing (*salmi*) that make up of the complex bracket (*gongpo*) are carved to create double S-shaped curves, which do not appear in Joseon constructions. The main crossbeam (*daedeulbo*), ridge crossbeam (*jongbo*), and external crossbeam (*toetbo*) have jar-shaped cross-sections, which are different from the simple rectangular cross-sections seen in Joseon architecture. In addition, headpieces of crossbeams were carved into a vine shape. *Umiryang* is a crossbeam greatly bent like an ox tail, which can be only observed in Goryeo architecture. A ridge post (*daegong* and *hwaban*) are also elaborately carved into shapes such as curled lotus leaves. The external facing adopts sophisticated and elaborate techniques such as placing longer columns outward (*gwisoseum*), placing columns tilted



Entasis Columns, Sammun Gate of Imyeonggwan Guesthouse in Gangneung (Korea Heritage Service 2004, 15)

Cheomcha in Double S-shaped Curves, Muryangsujeon Hall of Buseoksa Temple (Korea Heritage Service 2002, 23)

Umiryang and Curled Lotus Leaves-shaped *Hwaban* (Korea Heritage Service 2005b, 31)

Vine-shaped Ridge Crossbeam Headpiece, Daeungjeon Hall of Sudeoksa Temple (Korea Heritage Service 2005b, 34)

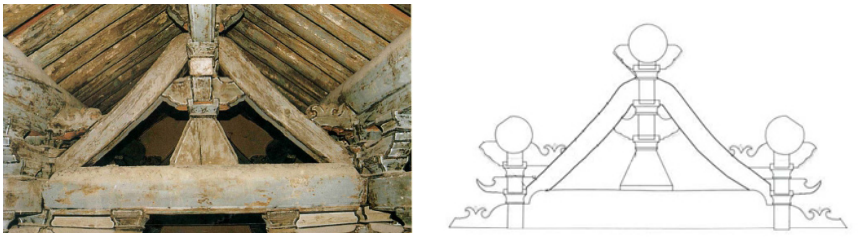
Figure 3. Beauty of Curves in Goryeo Architecture

inward (*anssollim*), creating the roof with four inwardly curved edges when observed in the bird's eye view (*hurim*), and making roofs look like flying into the sky when seen from the outside.

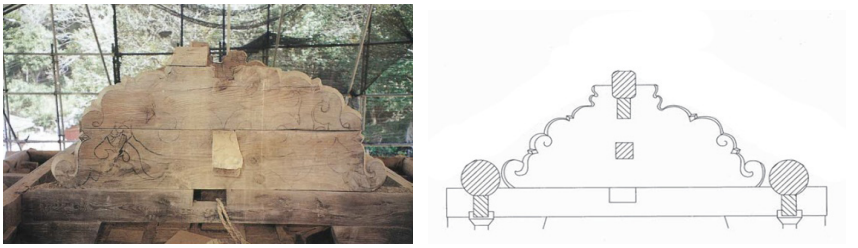
Second, various components were used in Goryeo architecture. Compared to Joseon architecture, smaller and more diverse components were applied to create complex structures.

Let's compare the components supporting the ridge purlin (*jongdori*). For the Muryangsujeon Hall of Bulguksa Temple, the ridge purlin is propped up by a trapezoid-shaped ridge post, a base bracket wing (*chogong*), a bracket arm (*cheomcha*), 人-shaped ridge post (*soseuldaegong*), which are placed in order on top of the ridge purlin. However, for the Eungjindang Shrine of Mihwangsa Temple, only a large ridge post made by attaching two wooden boards together (*paryeondaegong*) is used to support the ridge purlin.

The same comparison is applied to techniques connecting crossbeams and purlins. For the Geungnakjeon Hall of Bongjeongsa Temple, purlin supports, such as *jangyeo* and *jangyeo* supports (*soro*), are connected between the main crossbeam and the column-top purlin (*jusimdori*). However, in the case of the Daeungjeon Hall of Mihwangsa Temple, the main crossbeam and the column-top purlin are directly jointed without any other components.

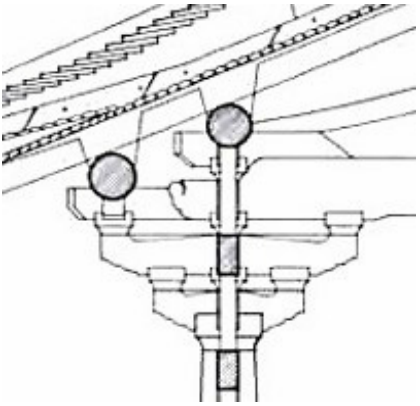


Strut (*jongdaegong*), Muryangsujeon Hall of Buseoksa Temple (Korea Heritage Service 2002, 30; 211)

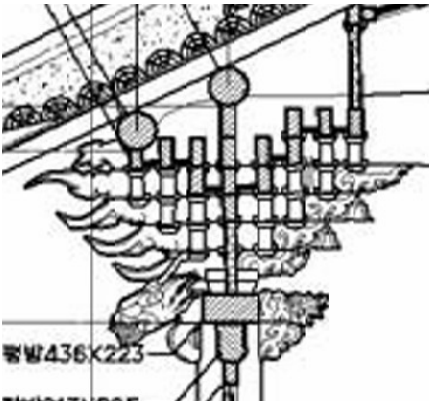


Strut, Eungjindang Shrine of Mihawangsa Temple (Korea Heritage Service 2002, 19; 200)

Figure 4. Comparison of Construction Components in Goryeo and Joseon Architecture I



Geungnakjeon Hall of Bongjeongsa Temple
(Korea Heritage Service 1992, 237)



Daeungjeon Hall of Mihwangsa Temple
(Korea Heritage Service 2011, 422)

Figure 5. Comparison of Construction Components in Goryeo and Joseon Architecture II

Third, Goryeo architecture adopted proportional modules. Although this technique had been inherited from the architectural tradition of Unified Silla, it was matured most during the Goryeo dynasty and rarely appeared in Joseon architecture thereafter.

Let's look at the figure below analyzing the *gagu* structure of the Geungnakjeon Hall of Bongjeongsa Temple. *Gagu* is a general term referring to the wooden structure from the top of the column to the ridge purlin. Here, the structure is formed by repeatedly placing modules created proportionately in the same cross-sectional size. This diagram indicates that the *gagu* structure from the lintel (*changbang*) on the top of the column to the ridge purlin is built by stacking same-height modules.

Fourth, both the column-top and multiple complex brackets, or *jusimpo* and *dapo* in Korean, respectively, are observed in Goryeo architecture. The former has a complex bracket placed only on the top of a column, while the latter has a complex bracket created not only on the top of columns but also between columns. The former is handed over from earlier periods and also appears in Goguryeo tomb murals, as well as in the 7th–8th-century architecture of neighboring China and Japan. The latter is assumed to have been used since the late Goryeo dynasty, while it is not clear exactly when it first used.

Among Goryeo buildings built using the multiple complex brackets,

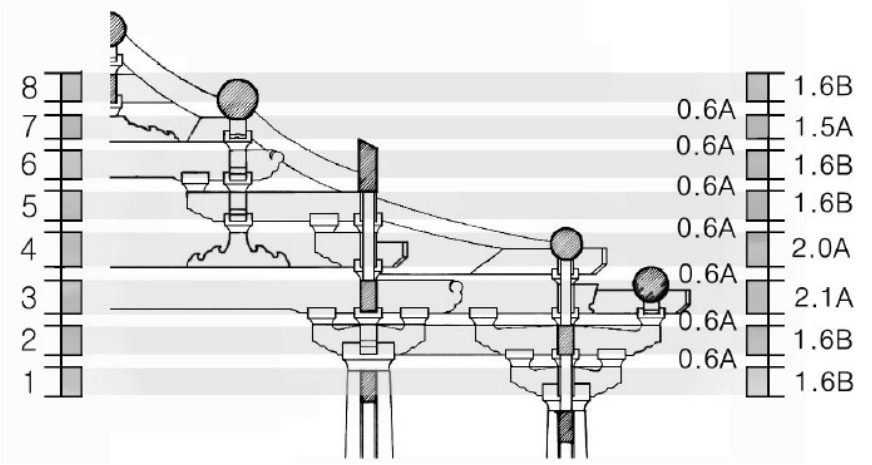


Figure 6. Cross-sectional Diagram of the *Gagu* Structure, Geungnakjeon Hal of Bongjeongsa Temple (Kim 2011, 177)

three reportedly remain in North Korea and are located near the then Goryeo capital Kaesong서: Eungjinjeon Hall of Seongbulsa Temple; Bogwangjeon Hall of Simwonsa Temple in Pakchon; and Bogwangjeon Hall of Simwonsa Temple in Yontan. Therefore, it can be inferred that multiple complex brackets were applied first around the then capital Kaesong. This implies that the Goryeo dynasty was a transitional period from column-top to multiple complex bracket architectural styles.

Conclusion

We have examined the characteristics of the extant Goryeo constructions, which can be summarized by keywords as follows: elaborate decorations, beauty of curves, complex structures, proportional modules, and a transitional period.

These keywords have been drawn by analyzing only a few remaining Goryeo buildings, and therefore, it is obvious that they have limitations. Nevertheless, it is intriguing that they are similar to those of neighboring China at the time. It is not difficult to identify the characteristics of the Song dynasty since buildings constructed in that period still remain in large numbers, and *Yingzao fashi* (*Treatise on Architectural Methods or State*

Building Standards 营造法式) has also been passed down to this day. The key feature of the structural carpentry described in the treatise is *caifen* 材分, almost identical to the abovementioned proportional modules of Goryeo architecture. This indicates that Goryeo architecture was closely related to the trends of East Asian wooden architecture at the time.

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