

An Interpretation of Archetypal Form of Byungyoung Castle in Ulsan City

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ABSTRACT

The purpose of this study is to verify the characteristic location of Byungyoung Castle, physical type, inside spatial organization, and the scheme of Byungyoung Castle. The study utilizes historic literature, ancient maps related to Byungyoung Castle, topographical and cadastral maps which were published under the rule of Japanese Imperialism and the topographical maps which were made recently by National Geographic Institute with various scales. The methodology of the study is to interpret the contents from the historic literature on the site map. The result of the study is as follows:

Byungyoung Castle does duty as a defensive base for the entire country and has a specific character of location that has the dual function of a mountain fortress for national defense and of a village fortress for the town.

Byungyoung Castle has four gates on four sides and has an oval shape very close to a circular form. The road construction inside the castle is composed basically of a cross shape. Byungyoung is located in the northwest area of this major road system.

The private houses that lie along the north-south road are built up at the core area of the lower level and the town market built up around the south gate becomes the heart of life for the people.

Schematically, it has the same pattern as regular village fortress, in that the houses for the guests and the houses for the public office are arranged to the east and the west. It is considered that there is certain functional parallel between Byungyoung Castle and Ulsan castle because there are no facilities for sacrificial rites no institutional budding.

Key Words : Byungyoung Castle, Yozidoso(輿地圖書), Sense of location, Spatial organization, Construction scheme

I. INTRODUCTION

Ulsan located in a geographically specific area, has been a significant strategic point for defending

the territory from the period of the three Kingdoms to the period of Chosun. Root of this fact is evident with about thirty castles found around the Ulsan area (Yoo, and Park, 2001). Among those castles around

Ulsan, Byungyoung Castle, designated as cultural property (1987. 7.18), is an important relic along with Kwanmun Castle and Unyang Village Castle, and it is necessary to restore because it has a great value as a cultural asset. Also, because a part of Chesung(體城) and Ongsung(甕城) still exist and the documents found, Byungyoung Castle is a physical factor as an important landscape element in the urban area because it is located in the area of urbanization. And it is possible to recognize two dimensionally because it is a linear object. Byungyoung Castle has also a formal character that can act as a landscape element for a landmark in Ulsan by having invariable height. Consequently, the restoration of this castle can function as a special opportunity to show historical identification in modern Ulsan which has few cultural properties that could not be restored because of city development projects.

The city of Ulsan requested the Museum of Dong-A University to investigate Chesung(體城) and Chisung(雉城) in the southeast area in 1985 and published the report, Byungyoung Castle Improvement Plan, to restore archetypal form of Byungyoung Castle, to improve the livelihood environment for a local residents and to vitalize local economy in 1997. Recently, the research institute of cultural property in Changwon started the investigation excavation to find the remains around the estimated north gate site.

That investigation preliminary to the existing-condition-changing-permission-decision for the Sam-Il street construction(Ulsan city and Institute of Cultural Property in Changwon, 2001). These above projects seem to emphasize Ulsan's efforts to restore and to develop Byungyoung Castle as a tourism resource. But for the more complete restoration of Byungyoung Castle, it is necessary to discuss seriously the archetypal form, and it is required to

perform a broader investigative excavation both inside and outside of castle.

Most recently, the opinions that the city development project must be expedited with preserving a historic building, and a system and rule for the conservation of the cultural assets must be studied (Yoon, 1990). These efforts seem to come from a simple thought that because cultural property can be an important factor in and of itself for providing historic identification of the territory, and a venue for exhibiting evidence of a human behavior at that territory, it must be preserved during the period of city development. Consequently, Byungyoung Castle has to be considered as an important factor in the city development process of metropolitan Ulsan, then Ulsan can be resuscitated as an historic and cultural city harmonized with the past and present.

This study verifies the archetypal form of Byungyoung Castle as the first step for the restoration of the castle located in the urbanization area and the formulation of a preservation plan for the neighboring area thereby reclaiming the scenical identification as a historical city. The result of the study can be a guide for making the decision on the boundary and the extent of Byungyoung restoration.

II. CONTENTS AND METHOD

1. Contents and Boundary of Interpretation

The major contents of the study was the interpretation of geographical and spatial position to determine the location of Byungyoung Castle, the investigation of the formation of the castle, the exposition of the spatial organization inside of the castle, and the schematic construction of Byungyoung. The spatial boundary of the interpretation was limited to Byungyoung Castle

and the interior area and the periodical limitation was bound to the period of Chosun Dynasty. The focus of the interpretation was to offer fundamental data that could be used in case of the restoration of Byungyoung Castle.

2. Resources for the Interpretation

Byungyoung Castle has enough data, historic literature and ancient maps, compared with other cultural property of Ulsan, and it also has the results of the recent excavated investigation. Therefore, the interpretation of archetype is possible. First of all, the related historical literature and maps were used as the core of data and the report of the excavation investigation and the improvement project were added. In addition, topographical and cadastral maps which were published under the rule of Japanese Imperialism, and topographical maps which were made recently by the National Geographic Institute, with various scales, were used for confirming the contents of literature review. The historic literatures used in this study were published during the period of the Chosun Dynasty ; 『Se-Jong-Sil-Rok-Gi-Ri-Gy(世宗實錄地理誌)』 『Ulsan-Kun(蔚山郡)』, 『Kyong-Sang-Do-Sok-Chan-Gi-Ri-Gy(慶尙道續撰地理誌)』 『Ulsan-Kun(蔚山郡)』, 『Sin-Jeung-Dong-Kuk-Yo-Gi-Seung-Ram(新增東國輿地勝覽)』 『Ulsan-Kun(山郡)』, 『Sa-Chan-Eup-Gy(私撰邑誌)』 『Ulsan-Eup-Gy(蔚山邑誌)』, 『Yo-Zi-Do-So(輿地圖書)』, 『Cha-Byung-Young-Gy(左兵營誌)』, 『Cheung-Bo-Mun-Hun-Bi-Go(增補文獻備考)』, 『Kyung-Sang-Do-Eup-Gy(慶尙道邑誌)』, 『Ulsan-Bu-Eup-Gy(蔚山府邑誌)』, 『Dae-Dong-Gi-Gy(大東地誌)』, 『Ulsan-Young-A(蔚山營衙)』, 『Young-Nam-Eup-Gy(嶺南邑誌)』, 『Uls-an-Bu-Eup-Gy(蔚豈山府邑誌)』, 『Cho-Sun-Whan-Yo-Seung-Lam(朝鮮豈輿勝覽)』, 『Ulsan-Kun-Gy(蔚山郡誌)』

and the report of the excavation investigation is 『Ulsan-Wae-Sung · Byung-Young-Sung-Gy(蔚山倭城 · 兵營城址)』, 『Byung-Young-Sung-Jong-Hap-Jung-Bi-Gae-Hoeg(兵營城綜合整備計劃)』, 『Ulsan-Byung-Young-Sung-Buk-Mun-Gy(蔚山兵營城北門址)』.

3. Methodology

First, the sense of location of Byungyoung Castle was researched to find out what kind of locational character Byungyoung had at that time with the contents of the related historic literature and the drawings in the ancient maps. And then, the original site was compared and analyzed on the topographical map of 1/50,000 which was made by National Geographic Institute. In addition, the location of Byungyoung was overlaid on the topographical map of 1/5,000 to find the locational character of Byungyoung Castle. Then two geographical cross sections were made. One was about the area between the four gates on four sides, and the other was about the south-north axis based on the south, north gates and the east-west axis based on the east, and the west gates. Those maps and drawings were analyzed for the geographical character of each sectional area and the total Byungyoung Castle site.

The spatial organization of Byungyoung Castle was interpreted by two methods. First, The interior road construction which interpreted after analyzing the road network on the topographic map of Byungyoung Castle appeared in Yozidoso(輿地圖書), and the topographic and cadastral maps which were published under the rule of Japanese Imperialism. Second is, the literature data on building composition appeared on the topographic and cadastral maps which were made during the rule of Japanese Imperialism, and scenic elements were

analyzed for interpreting the entire spatial organization.

The schematic construction of Byungyoung Castle was translated using a method of inquiry into the building arrangement and the interrelationship between buildings depicted on ancient drawing of Byungyoung Castle. At this time, the ancient drawing of Byungyoung Castle that shows the original features overcome the limitation as an image map. Also, the original schematic construction was confirmed by overlaying the recent map and the old maps which were from the period of Japanese Imperialism. In addition, the schematic construction of neighboring Ulsan Village Fortress and Unyang Village Fortress was compared and analyzed to provide objectivity of the interpretation.

III. RESULT AND REVIEW

1. The Sense of Location

According to documents, Byungyoung Castle is a reinforcing-stone-wall castle made in King Taejong(太宗)'s 17th year (1417) after moving the Cha-Do-Byung-Ma-Do- Chel-Jae-Sa-Young(左道兵馬都節制使營) in King Taejong's 15th year (1417). After that, in King Sejong(世宗)'s 8th year (1426), it was empty because Ulsan Byungyoung temporarily united the Woo-Do-Nae-Sang-Sung(右道內相城) of Right side Kyungsang(慶尙) located in Happo(合浦), Changwon. In King Sunjo(宣祖)'s 37th year (1604) it was moved back to the first site and then it became a defending castle added in Nam-Mun-Whae-Sung(南門外城) in King Chuljong(哲宗)'s 10th year (1859). As you can see, Byungyoung Castle was constructed in the early period of Chosun as a defending castle under the Byung-Ma-Joel-Do-Sa(兵馬節度使) for the enemy, and it was out of use for two hundred years after

King Sejong's 8th year. However, Byungyoung Castle was revitalized after King Sun-Jo(宣祖)'s 37th year and Byungyoung was established until the end of Chosun dynasty as an historically important place.

1) Geographic Character

『Yozidoso(輿地圖書)』 「Jwa-Byung-Young-Gy(左兵營誌)」 stated that Byungyoung Castle was located 4km from Ulsan (west), 6.8km from the East Sea (east), 4km from the sea (south), 20km from Kyongju(north), and according to these documents Byungyoung Castle was close to Ulsan Village Fortress and the neighboring sea. Therefore, the location was a point of strategic importance and when the documents revealed the relationship between Kyongju and Seoul with Byungyoung, it confirms function as a defending castle for Ulsan, and even the entire country (Figure 1).

On the map of 1/50,000, the recent location of Byungyoung Castle is shown 2.7km northeast of Ulsan Village Fortress that was the core of old urban area and 2.5km away from the junction of two rivers, Taehwa river (west-east axis) and East river (north-south axis). According to these factors, Byungyoung Castle is a back strategic base and is located in the important position that can defend



Figure 1. Map of Ulsan Province in "Yozidoso"

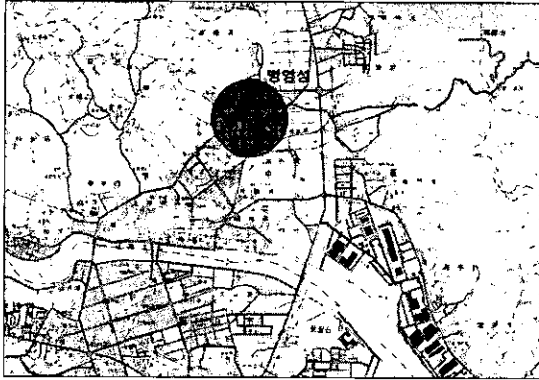


Figure 2. Locational Map of Byungyoung Castle
Scale: 1/50,000

against warship from the sea. In addition, topographic maps show Byungyoung Castle is set onto the key position on the 7th local road (Figure 2) and when this road has been connected with Ulsan and Kyongju, it can be confirmed that Byungyoung Castle is front base for defending inland.

2) Topographical Character

Byungyoung Castle is located in 20-59m above the sea at the foot of Ham-Wol mountain (200m), on the left side of the East river that flows from three mountains; Chi-Sul-Roung (756m) in the northwest, Dong-Dae mountain (444m) and Moo-Ryng mountain (452m) in the east. Comparing with neighboring topography, Byung -young is located at a higher level than others (Figure 2).

For more specific understanding, the sectional topographic character was researched with the section drawing of the important point between gates on the topographic map of 1/5,000, which was made by the National Geographic Institute, and the interior section drawing that shows the connection of south-north gate and east-west gate which was used for the analysis of the entire interior topography (Figure 3).

The result shows that the slope of the east side

of the castle connected with the north and the south gate is a very steep include of 26%-35% degrees and the slop of west side is only of 7%-12% degrees. Therefore, the east side of castle is easier than other sides for defense. However, the slope of the inside castle interior is 9%-14% degrees and it is a very different from the topography of outside the castle. In the case of the castle, interior the slope of the west side of castle is higher than the east side. It can be confirmed that the topography of east side is irregular (Table 1).

Checking the entire interior area with two section drawings connected with north-south and east-west gate, the area from the north gate to the south gate is lower and the area from west gate to the center of the castle has a downward in a line as well and after that, the topography of east gate is rising to a higher level. Consequently, Byungyoung Castle has a topographical condition that is high of east west and north sides, and is low of south side.

2. Formation of Castle

1) General Survey

Byungyoung Castle is a stone-wall castle and a defending castle which has an ellipse form similar to a circle. And it has four gates on four sides and there is Ongsung(甕城) at north and south gates each. Now, it is possible to restore Byungyoung Castle with the several remains: One is Chesung(體城) between the east and the north gate and between the north and the west gate. The other is the hill of ChiSung(雉城) in the southern area of the west gate and western area of the south gate. The last is the wall of the private houses in the southern area of the east gate. According to historic literature and the topographic map of Byungyoung in Yozidoso, there was a Ongsung with an ellipse form at the outside of Chesung at the north and the west gate, but now the

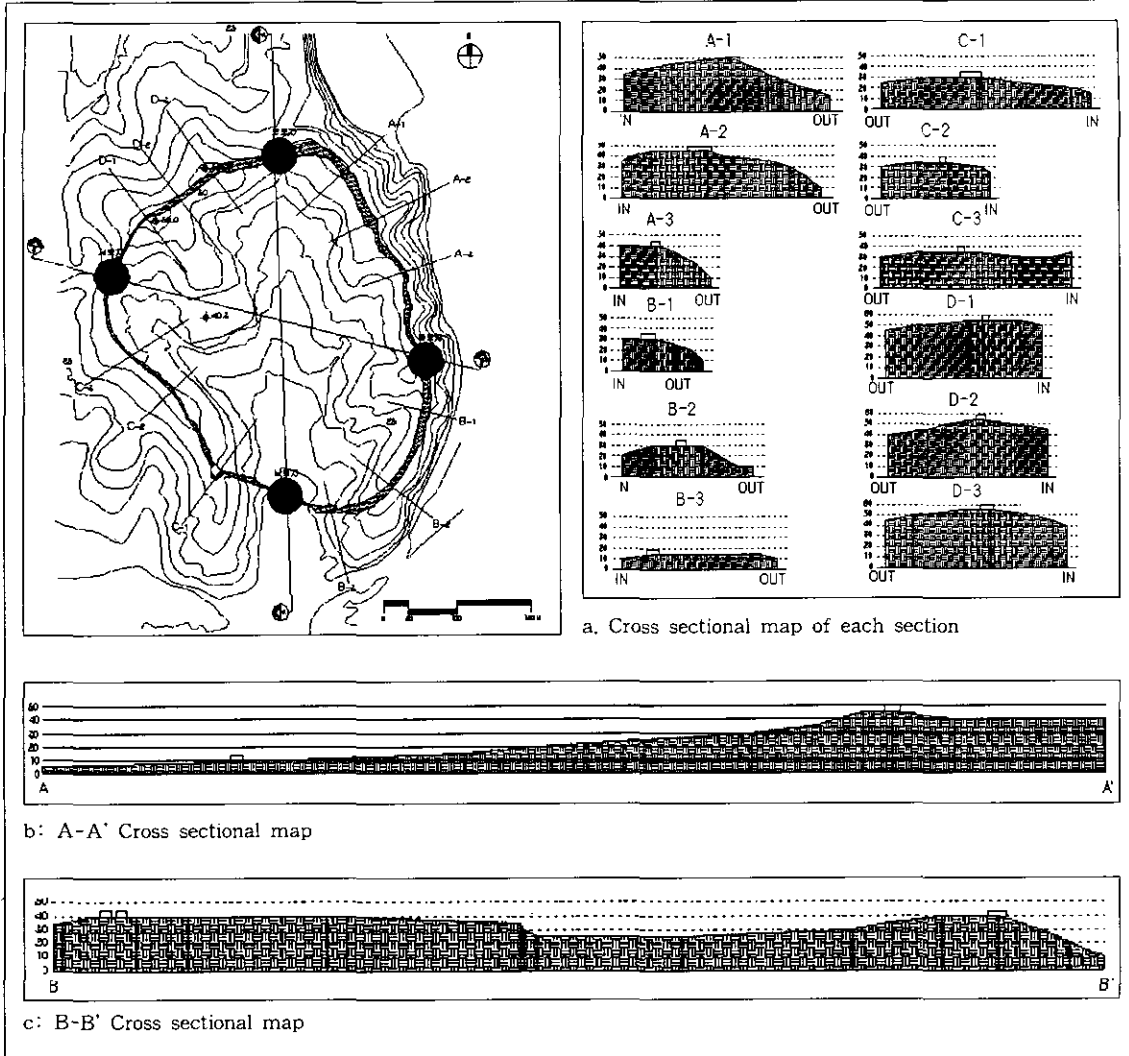


Figure 3. Topographical map of Byungyoung Castle

remains could be only found outside of the north gate. Additionally, Chisung remains in four places; the first is at the west of the south gate, the second and third are between the east and the north gate, and the fourth is at the south of east gate. This factor shows Byungyoung Castle had proper formalities. The remains of Chisung is confirmed in the steep upland and concentrated around the East river that troops could easily move by the water route. Furthermore, Byungyoung Castle had a moat

Table 1. Topogaphical analysis

Region	No.	Altitude	Regional slope		Average	
			In	Out	In	Out
E-N	A-1	50M	14%	33%	9%	38%
	A-2	46M	14%	29%		
	A-3	40M	-	52%		
E-S	B-1	32M	-	39%	11%	26%
	B-2	32M	18%	35%		
	B-3	15M	14%	4%		
W-S	C-1	35M	13%	6%	14%	7%
	C-2	36M	20%	8%		
	C-3	36M	8%	6%		
W-N	D-1	39M	8%	10%	13%	12%
	D-2	55M	14%	16%		
	D-3	58M	18%	10%		

deserved in the literature and the part of the remains were found outside wall in the north area during the excavation investigation.

2) The Girth of the Castle

There is substantial literature about the girth of Byungyoung Castle but there are discrepancies in the data regarding lengths; Kyong-Sang-Chan-Sok-Girigy(慶尙續撰地理誌)and Munjongsilrok(文宗實錄) (3,732 尺), Sachan-Eupgy(私撰邑誌) (3,733 尺), Yozidoso(輿地圖書) and Daedong-gigy(大東地誌) (9,316 尺), Kyongsang-Eupgy(慶尙邑誌),Youngnam-Eupgy(嶺南邑誌), and Cho-Sun-Whan-Yo-Seung-Ram(朝鮮豈與勝覽) (3,720 尺), Jeung-Bo-Mun-Heon-Bi-Go(增補文獻備考) and Shin-Jeung- Dong-Kuk-Yo-Gi-Seung-Ram(新增東國輿地勝覽)(3,723 尺). Yozidoso and Daewdonggigy(大東地誌) (9,316 尺) show significant differences. The reason is that Yozidoso may have miscalculated when the girth was converted by the unit of the Jang(丈), Chuk(尺), and Bo(步) because Yozidoso stated the girth as 918 Jang(丈) by jang(丈), 9,316 Chuk(尺) by chuk(尺), 1,836 Bo(步) by bo(步) and Daewdonggigy(大東地誌) was incorrectly recorded using the Yozidoso calculation as a reference. Actually, the girth of Byungyoung Castle is estimated to be about 3,720-3,733 Chuk(尺) using the available data. However, it is hard to convert the exact length of the girth because Whanjong-Chuk(黃種尺)(34.72cm), Ju-Chuk(周尺)(20.81 cm), Youngjo-Chuk(營造尺)(31.24cm), Joryogi-Chuk(造禮器尺)(28.64cm), Whoeng-Chuk(橫尺)(26.40cm), Pobaek-Chuk(布帛尺) (O-Roe(五禮): 44.75cm, Jun-Su(遵守): 46.73 cm, Kyong-Kuk-Dae-Jun(經國大典):46.80cm, Dong-Sa-Kak-Ju(銅四角周): 49.24cm, Ho-Jo(戶曹): 48.91cm), Il-Deung-Yang-Jun-Chuk(一等量田尺)(99.36cm), and Whang-Jong-Yul-Kwan(黃種律管)(31.25cm) were used in the Chosun dynasty.

Among the recent studies of Byungyoung Castle, there is evidence that Pobaekchuk(布帛尺) was used to measure the Chuksu(尺數) of the Village Fortress in the Youngnam area and according to Pobaekchuk the length of the girth is 1,738-1,745m. Recently, Ulsan measured the girth at 2,120m (Ulsan 1997) and the Research Institute of Cultural Property in Changwon said this length might include the Whaesung(外城) that was constructed on King Chuljong(哲宗) 10th year around the south gate (Ulsan city, Research Institute of Cultural Property in Changwon 2001). Finally, the length of the girth is about 1,740m using Pobaekchuk from the data in the literature.

3) The Height of the Castle

A lot of literature mentions the height of the castle; Munjongsilrok(文宗實錄) (8 Chuk), Kyong-Sang-Sok-Chan-girigy(慶尙續撰地理誌) (9 Chuk), Jeung-Bo-Mun-Heon-Bi-Go(增補文獻備考)(10 Chuk), and Shin-Jeung-Dong-Kuk-Yo-Gi-Seung-Ram(新增東國輿地勝覽), Yozidoso(輿地圖書), Kyongsangdo-Eupgy(慶尙道邑誌), Sachan-Eupgy(私撰邑誌)(12 Chuk) since the calculations are similar to each other, estimates put, Byungyoung Castle at a height of the 8-12 Chuk, which converts to 3.7-5.6 m using Pobaekchuk (布帛尺).

3. Construction Scheme

Byungyoung is a defensive castle for blocking an enemy advance, but it has a similar formation as a village fortress. In fact, it took the place of Ulsan Village Fortress after the fortress was destroyed during Im-Jin-Whae-Ran(壬辰倭亂) and it seems to have many varieties after taking charge of the function of a village fortress. In general, the village fortress should be located in the core of village for the Eupchi(邑治). And according to the geomantic

system it should be located in the best position with a mountain in the background with river on the front. Byungyoung Castle is ideally positioned because it has also Hwang-Bang mountain and has the East river in front of the castle (Yoon and Kim, 1987). However, these factors for the best position were not the primary conditions for the Byungyoung location because castle constructions considered the geography for defense.

In this study, the contents and the geographic map Yozidoso were used for analyzing the interior of the construction scheme. Yozidoso is the geographical map of the entire country for the continuation of Yogiseungram(輿地勝覽) with all village maps in the country. It is composed with Yozido(地圖) and So(書: Eupgy(邑誌)) (Noh, 1979). Yozidoso has a total of 312 maps and among these maps, Youngido(營地圖) has 16 maps. The maps in the Youngido(營地圖) show a mountain, a stream, the house for the public office and guests, storage facility, and pond. But the exact location, size, or formation of the buildings were not clear because these were expressed in paintings. However, it is possible to interpret, what kind of buildings were there or what kind of relationship each had.

1) The road construction

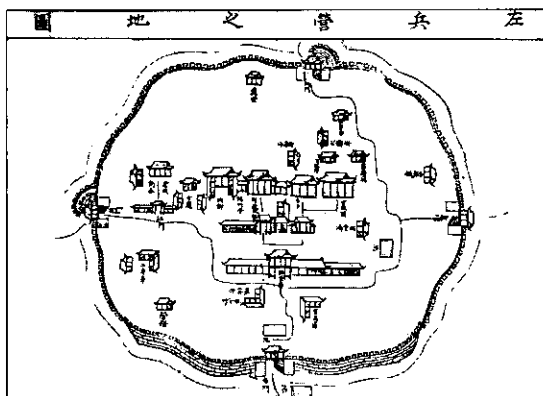


Figure 4. Map of Byungyoung Castle in "Yozidoso"

There is a limitation on interpretation of the entire construction scheme because the geographic map (Byongyoung-sung-gi-gi-do:兵營城之地圖) in Yozidoso only depicts Gonghae(公係) and public buildings. But it is possible to understand the interior road construction because Byongyoung-sung-gi-gi-do(兵營城之地圖) shows the major roads that connect the four gates. Comparing with Byongyoung-sung-gi-gi-do and a survey map from 1912, the topographic map (Figure 5) and a geographic map (Figure 6) from the survey show the cross road system and there is Jinhaeru(鎭海樓) which is the south gate of the house for the guest's at the junction of this road and is the landmark for Byungyoung Castle. The front area of Jinhaeru(鎭海樓) seems to be a symbolic place because the width of the road get wider at there. The buildings of the guesthouse and the public office are located in the northwest area of the cross road and it could be interpreted that the construction scheme of the castle interior has a different character in each domain.

According to the cadastral map (Figure 6) in 1912, the cross roads were constructed straight and functioned as the main arteries and had several branch streets. This system of network roads seems to suggest that the main street was planned and the branch streets were created autogenously. In addition, it could be confirmed that the road system of the village fortress is purposely planned because there is the study that the width of the road was 16 Chuk(尺) which was the Jungro(中路) of Han-Sung(漢城). There is no data about the width of the interior castle but on the picture 5 and 6, the width of the main cross road may be about 5m and the width of the T form road in front of Jinhaeru may be 9m.

2) Spatial Organization

In general, there are administration buildings



Figure 5. Topographical map in Byungyoung Castle(1912)

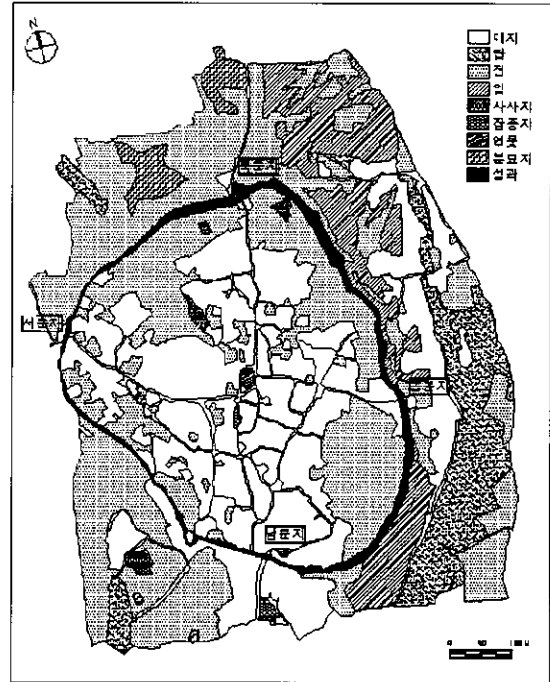


Figure 6. A cadastral map in Byungyoung Castle(1912)

(the house for the guests and office, and Hyangchung(鄉廳) Gonghae(公廳)), the facility of the sacrificial rite (Samdan(三壇); Sajikdan(社稷壇), Seong-whang-dan(城隍壇), Yodan(壇囊), Ilmyo(一廟); Munmyo(文廟), Hyangkyo(鄉校)), institutional facility (Hangkyo(鄉校), Seowon(書院)), and commercial building (Jangsi(場市), Hyangsi(鄉市)), and these buildings were arranged using the regular rules (Yoon Jang Seop&Kim Sun Bum, 1987). However, it is impossible to interpret the entire spatial organization with the Byungyoung-gi-gi-do(兵營之地圖) which has no data about the location of the buildings except the part of Gonghae(公係) and the facility of the sacrificial rites located in the northwest area of the cross roads. According to picture 5 and 6, it is possible to understand that there are many buildings in Saepilgy(細筆地) and the village composed of the private houses are arranged along the south-north

axis. Yozidoso states there were 469 private houses in the castle and about 2,000 people lived there. One of the important features is Jangsi(場市) located in the south gate area that was the core of the life for the people and Youngnam-Eupgy(嶺南邑誌), Cho-Sun-Whan-Yo-Seung-Ram(朝鮮豈興勝覽), and the geographical map which was published under the rule of Japanese Imperialism has significant evidence of the Jangsi. The area along the south-north gate, around the east gate area, is designated as a field and there are no private houses in this huge field. Therefore, this field was used for the military. The east gate area is the major defensive base and the slope is very steep. This huge field area is for the small military facility instead of private houses.

A lot of literature mentions that Byungyoung had a water facilities such as a pond, well, and creek. Kyong-Sang-Do-Sok-Chan-Gi-Ri-gy(慶尙道續撰地理誌), Shin-Dong-Kuk-Yo-Gi-Seung-

Ram(新東國輿地勝覽), Sachan-Eupgy(私撰邑誌), and Daedonggigy(大東地誌) state there are several water sources; wells (7 spots), and creeks (2 spots). Yogidoso describes three ponds; one is in south gate area (length 40 Bo(步), width 83 Bo(步), depth 3 Chuk(尺)), another is in east gate area (length 49 Bo(步), width 30 Bo(步), depth 2 Chuk(尺)), and last one is out of the south gate area (length 95 Bo(步), width 83 Bo(步), depth 4 Chuk(尺)). Jeung-Bo-Mun-Heon-Bi-Go(增補文獻備考) mentions there are seven wells, two creeks, and three ponds. In summary, Byungyoung Castle had three ponds, seven wells, and two creeks. Kyong-Sang-Do-Sok-Chan-Gi-Ri-Gy(慶尙道續撰地理誌) states these water are never dried out during the winter or summer. The above factors seem to understand the water system was completely maintained for war because water is a very important element for war. Every village records the location of the water elements (pond, well, creek) and storage areas for weapons. However, traces of these water features could not be found. The geographic map which was made under the rule of Japanese Imperialism has the data about three spots, but the location differ with the exception of the one around the south gate. In the case of the pond, there are six spots but those are not positive (Ulsan, 1997). The creeks are found on the geographic map from the Japanese Occupation Imperialism and there are several Gugeo(溝渠) along the road to the south gate, but it does not seem to be original. Youngnam-Eupgy (嶺南邑誌) mentions the pond had a pavilion but there is no trace.

The model drawing of Byungyoung Castle is as follows: (Figure 7).

3) Construction Scheme

The building of the public office and the military facility can be confirmed in detail because

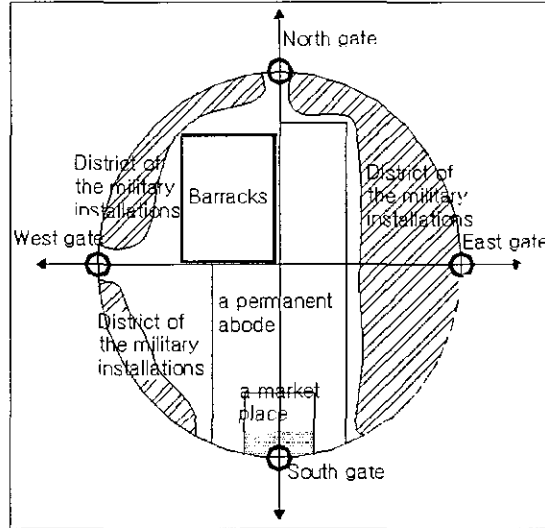


Figure 7. Simulation map of spatial Organization in Byungyoung Castle

Yozidoso and Joe-Byong-Young-Gy(左兵營誌) have the data about the name of the Gonghae(公係) and storage. According to the literature, the building of the Gonghae(公係) is Dokdang(霽堂:Jaedok(祭霽)), Seonwhikak(宣威閣:Gaeksa(:客舍)), Unjuheon(運籌軒), Chimkwadang(沈戈堂), Seonchodnang(鮮條堂), Naea(內衙), Jinhaeru(鎮海樓), Baek-whadang(百和堂:Kunkwansogoe(軍官所居)), Simyakchung(審藥廳:Toepyo(頽廢)), Young-richung(營吏廳), Gikwanchung(記官廳), Inichung(人吏廳), Gigokwanchung(旗鼓官廳), Jang-kwanchung(將官廳), Susungchung(守城廳), Chanjuheon(贊籌軒:Uhucheso(虞候處所)), and Jangdae(將臺:Sureonjaogiche(居練座起處)), and in part, the building for storage is recorded in detail. Byongyounggigido(兵營之地圖) in Yozidoso(輿地圖書) expressed these buildings for the construction scheme but there are some differences. Chebyelheon(戚鯨威軒: Jeoldosacheoso(節度使處所)), Maejukdang(梅竹堂), Jinmuchung(鎮撫廳), Beolkunkwan-chung

(別軍官廳), and several storage buildings are found instead of Yozidoso but Unju-heon(運籌軒),

Chimkwadang(沈戈堂), Gikwanchung(記官廳), Inichung(人吏廳), Susungchung(守城廳) are not showed on the Byongyounggigido(兵營之地圖).

For the entry, Jinhaeru(鎮海樓) as the south gate for the house of the guest is located at the junction of the four gates. After Jinhaeru, the area of the guest house is set around Seonwhikak(宣威閣), and the area of the house for the public office is separate set around Chebyulheon(戚鰲軒). Therefore, two areas can have the independent character. The house for the guests is the place of Haeng-Kwol-Mang-Bae(向闕望拜) that dedicates Jeonpae(殿牌) and Kwolpae(闕牌). This house has several functions that entertain and lodge a guest from the capital, and perform the duty of Sunmu(巡撫) and Jeopchal(接擦) as a court. Sunwhikak(宣威閣) is in the core of that buildings. The facility for the public office that accomplishes the official duty has two buildings. One is Chebyolheon (戚鰲軒) for the Jong-2-Pum-Jeoldosa(從2品 節度使) and the other is Chanjuheon(贊籌軒) for the Jong-3-Pum-Uhu(從3品 虞候). In general, the village fortress has Dongheon(東軒) and the house for the guests. The house for the guests at the east and Dongheon(東軒) at the west are a formal composition. Consequently, Byungyoung Castle has a similar formation to village fortress.

Byongyoung-sung-gi-gi-do(兵營城之地圖) shows the various military facilities that are Baekwhadang(百和堂) of Kunkwansogeo(軍官所居) around the house for the guests, Simyakchung(審藥廳) of Pankwansogeo (判官所居), and storage a building. Byungyoung Castle arranges the military facility nearby the house for guests and this arrangement is similar to the guest house in Ulsan Village Fortress and Unyang Village Fortress. In Ulsan Village Fortress, the house for the guests is composed with the Haksungkwan(鶴城館) as a major building and Dong · Seochung (東 · 西廳).

And the eastern and southern areas have a military facility and a building related to taxes. Unyang Village Fortress has a military facility centering around the Jaekkwon(客館). It is formal in that the military facility is arranged around the building of the guest house. In the case of Ulsan Village Fortress, the military facility is shown around Dongheon(東軒) but this is for the internal security of the castle and is different from the military facility around the house for the guest.

There is a Dokdang(纛堂) for sacrificial rites and is located in the backyard of the guest house area and the office building area. This is different from Samdansisul(三壇施設) in Ulsan and Unyang Village Fortress and there is no institutional building like Hoyngkyo(鄉教). Furthermore, the facility of the pavilion or Nukak(樓閣) that is appeared with Ohsongjung (五松亭) of Ulsan Village Fortress and Chihangjung(翠香亭) and Unghangkak(蟬香閣) of Unyang Village Fortress for the master does not existed in Byungyoung.

Finally, the construction scheme of Byungyoung is similar to a general village fortress but because the purpose of the castle is defense, a facility for sacrificial rites and institutional building don't exist. Instead, a military facility resembling a storage facility is added. The result is that Ulsan Village Fortress is the core of administration and Byungyoung Castle was assigned the duty of the military.

In this study, the construction scheme which appeared in Byongyoung-gi-gi-do (兵營之地圖) in Yozidoso(輿地圖書) was analyzed and compared with the neighboring Ulsan and Unyang Village Fortresses for the objectivity. The result of the analysis is as followed. (Table 2).

Table 2. Spacial Construction comparison between Ulsan · Unyang Eupsung and Byungyoung Castle

Section		Ulsan	Unyang	Byungyoung
Gaeksa	Location	East	West	East
	Diagram			
Dong-heon	Location	West	East	West
	Diagram			
Construction scheme				

Legend: : military installations: attached facilities: : managing facilities: : facilities related tax

IV. CONCLUSION

This study was taken to verify the locational character of Byungyoung Castle, the physical formation of the castle, the spatial organization of the castle interior, and the construction organization of Byungyoung. The purpose of the study was to establish the guidelines for the restoration of Byungyoung and the management of neighboring landscape and could provide the important insight for deciding the level of the restoration of Byungyoung Castle.

The result of the study with several viewpoints are as follows.

First, regard as location and space, Byungyoung Castle is located in the junction of the invasion routes; where the east river and the road connected with Ulsan and Kyongju. It has locational character as a defensive castle for the entire country.

Second, the result of topographic analysis shows that the slope of the eastern area is very steep and the areas east, west, and north are higher than the southern area. The wall area is higher than the center area. Therefore, Byungyoung has the locational character of a mountain castle and a village fortress.

Third, Byungyoung has four gates on four sides and it is a stone-wall castle of elliptical form similar to a circular form. This defensive castle has the girth of about 1,740 m and the height of about 5 m.

Fourth, the road construction of the castle interior consists of a cross form and Jinhaeru(鎭海樓) as the symbolic main gate is made at the junction of those major roads. Byungyoung is set in the northwest area of the major road.

Fifth, the private house the inside castle is arranged at the center area along the major road and Jangsi(場市) which was the core of the life for the

people is made positioned near the south gate area.

Sixth, there were facilities for gathering water (pond, well, and creek) and there was a pavilion around the pond but now it is impossible to restore the original form because no traces remain.

Seventh, the area of the house for the guests and the building of the public office is divided on the east and the west side and is similar to the construction of the village fortress. A facility for sacrificial rite and institution did not exist.

There is a limitation for the interpretation of the archetypal form using only literature review and analysis of maps. For better restoration, the castle wall, the gate area, surface analysis, and the excavation investigation at the Byungyoung elementary school which is the original location of Byungyoung should be preferentially launched. The investigation of the facilities related to water (pond, well, and creek) should also be started. The boundary of the restoration should be decided soon in consult on with the contents of the city development plan like the trend of land use or the street development. It is proposed that the level and the method of the restoration should be studied. If the excavation investigation of important areas in Byungyoung Castle was to start in the future, the limitation of this study should be studied again.

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