

A study on standardized model of 'Hanok' through analysis on traditional Korean-style houses in Jeonnam Province

– Case Study around the main building of '—'- style house –

Paek, Dong Soon¹ and Cheon, Deuk Youm², Yoo, Uoo Sang³

¹Department of Architecture, Chonnam National University, Gwangju, Korea,
pds2323@naver.com

² Department of Architecture, Chonnam National University, Gwangju, Korea,
dycheon@hanmail.net

³ Department of Architecture, Chonnam National University, Gwangju, Korea,
usyoo@jnu.ac.kr

ABSTRACT : A traditional Korean-style house, so called 'Hanok', has been fallen from favor with public as a form of residence lag behind or as a cultural property. However, 'Hanok' has a huge possibility as a residing construction where thousands of years of experience were accumulated. Recently, as well-being and health has become a matter of primary concern, a comfortable house and environment-friendly matters have attracted public attention.

However, 'Hanok' is still unfamiliar to modern people regardless of all these possibilities, because of the reason that it is not appropriate for modern life and because of high cost of construction.

With all these facts as a base, this research would like to offer a plan to find standard model of 'Hanok', through highlighting merits of traditional 'Hanok' by investigating traditional Korean-style houses in Jeonnam region, and complement some weak points to fit life of modern people by finding space-organization techniques and factors.

Keywords: Jeonnam region, a traditional Korean-style house, environment-friendly ,standardized model, space organization

1. INTRODUCTION

1.1 The Background and the Purpose of a Research

Traditional Korean-style house, Hanok forms a city and a village where we are living and it is our cultural environment. But, the history of Hanok has been broken off nearly in the course of modernization. That is to say, it is unsuccessful to establish it as our housing culture for a long time. It has passed 30~40 years so soon since an apartment in a city and a slab house with a

brick in farming and fishing villages was a symbol of our housing culture. In even case of farming and fishing villages having the concept of Hanok, Hanok has been disappeared gradually. The reason why Hanok is disappeared gradually are mainly 3 reasons as follows. The first is expensive construction costs, the second is the inappropriate inconvenience in comparison with modern life, and the third is a cold room due to insufficient insulation effect.

This research is the basic study to keep 'Hanok' as which is valuable cultural

heritage developed for long time by supplementing above disadvantages and seeking how to use 'Hanok' as a housing architecture to be maintained in future.

Based on these facts, this research investigated and analyzed a main building of a '—'-style house which is the feature of a traditional Korean-style house(Hanok) in Jeonnam province and found the noticeable elements of living space in the past to make use of the advantages of a traditional Korean-style house(Hanok) by investigating. Also, it tries to find the possibility of modernization of Hanok in order to suggest how to standardize a current standard model of Hanok through a case study by supplementing the disadvantages in comparison with the modern life.

1.2 The range of a target house for a Research and The methods

The houses with a '—'-style main building in Jeonnam province were selected as the object of this research. In Jeonnam province, 40 houses which were designated as a local cultural heritage are distributed in 11 cities and guns among total 22 cities and guns. The 11 houses which have good condition and are able to representative were selected among them. This research selected representative houses of each city and gun and analyzed the ratio of plane. We could understand the relative importance for the room in Jeonnam province through the ratio of each room.

This research tries to use the optimum ratio of the rooms on a plane as the basic data of a standardization model for Hanok.

Area	Quantity of a House	Area	Quantity of a House
Gokseong	1	Yeonggwang	1
Naju	6	Yeongam	4
Damyang	5	Janheung	5
Muan	2	Hampyeong	1
Boseong	6	Haenam	1
Suncheon	8	Total	40

Figure 1. Designated cultural property of '—'-letter' style main building of a house in Cholla-Namdo region

2. A PLANE FIGURE OF A '—'-STYLE HANOK IN JEONNAM PROVINCE

2.1 The Plane Features

The '—'-style main building among the main buildings of a traditional Korean-style houses existing in Jeonnam province were mainly constructed between the early of 19C and 20C. These main buildings can be often found at the areas such as Dorae village in Naju, Ganggol village in Boseong and Bangchon village in Jangheung.

Actually, a private house(a main building) in Jeonnam province consists of 3~4 rooms in case of a small-sized house and 5~6 rooms in case of a big-sized house. And the rooms consist of a kitchen, a main room, an ondol room, a side room and a marae(a private sitting room, a floor room) which is used as a storage room. These rooms are harmonized systemically in accordance with the scale of a house or the area and make a full scale house.

The function of each room is nearly similar to one of another province. But, 'marae' having a storage function can be a special feature expressed only in Jeonnam province.

2.2 The Plane Components

2.2.1 Ondol Room

This room is one of side rooms in comparison with a main room. It is located in front of a kitchen that we can imagine from the name. This room developed just in Jeonnam province is a noticeable room where it is difficult to find it in a private house of another province.¹

¹ Kim, Ji-Min, Study for the plane style of a main building at a private house in Jeonnam province, Architectural History Magazine volume No.14, 2005

Name of a House	Construction Date	Scale	Household	Position of Stoop
Gunjichonjeongsa in Gokseong	The early of 19C	Front 4 rooms Side 2 rooms	No Pillar, 5 Ryang	Front and Rear
Hong, Ki-Eung's house in Naju	In 1892	Front 6 rooms Side 1 room	2 Pillars, 5 Ryang	Front, Rear and Right
Yoo, Jong-Heon's house in Damyang	In 1919	Front 5 rooms Side 2 Rooms	2 Pillars, 7 Ryang	Front, Left and Right
Na, Sang-Yeol's house in Muan	In 1912	Front 6 Rooms Side 2 Rooms	1 Pillar, 5 Ryang	Front, Rear, Left & Right
Moon, Hyeong-Sik's house in Boseong	In 1915	Front 5 Rooms Side 1 Room	2 Pillars, 5 Ryang	Front, Rear, Left & Right
Cho, Soon-Tak's house in Suncheon	In 1934	Front 6 Rooms Side 1 Room	2 Pillars, 7 Ryang	Front, Rear and Left
Lee, Kyu-Heon's house in Yeonggwang	In 1895	Front 6 Rooms Side 2 Rooms	2 Pillars, 5 Ryang	Front & Left
Choi, Seong-Ho's house in Yeongam	In 1890	Front 4 Rooms Side 1 Room	2 Pillars, 5 Ryang	Front, Rear, Left & Right
An Old house in Jangheung	In 1937	Front 5 Rooms Side 2 Rooms	1 Pillar, 7 Ryang	Front, Left & Right
Lee, Gyu-Haeng's house in Hampyeong	In 1750	Front 6 Rooms Side 1 Room	2 Pillars, 5 Ryang	Front, Rear, Left & Right
Min, Jeong-Ki's house in Haenam	In 1845	Front 7 Rooms Side 1 Room	2 Pillars, 5 Ryang	Front & Rear

Fig. 2. Investigation object of '- letter' style main building of a house in Cholla-Namdo region

2.2.2 Marae

It is an importance room installed inside of a main building in case of a private house in Jeonnam province. There is installed a shed and etc. are only in the attached building such as a servant's quarters and 'marae' which is a storage room of important goods such as rice, grain and etc. is installed in a main building. The bottom is generally made of a floor, but sometimes it is made of a soil in case of a small-sized house. The use of this room is storage, and all kinds of household products are stored here.

The name of 'marae' is called as 'a floor room' or 'a hall' in accordance with the region. On the other hand, it is often called as 'a private sitting room' at the area in a mountain like Gurye and Jangheung in Jeonnam province. Commonly, it is called as 'marae', 'mari' and 'malrae' at several areas in Jeonnam province such as the southwest islands and inland area near coast. Especially, it has a role of mental prop and

staying place of a family in these areas. That is to say, it is used for accomplishing a religious ceremony locating an ancestral tablet of generally 3 family lines. The ancestors in the areas used wisely it as the place to serve a religious ceremony according to the situation of that times that it was difficult to build separately an ancestral shrine. Sometimes, an exclusive board fence according to the function of storage and a religious ceremony is installed in front and back side of it.²

2.3 Case study for a traditional Korean-style house

The plane configuration of a '—'-style main building in Jeonnam province will be described by a case study. The objects of research are total 11 houses such as Gunjichonjeongsa (important folklore materials No. 155) in Gokseong which is

² Kim, Ji-Min, Study for the plane style of a main building at a private house in Jeonnam province, Architectural History Magazine volume No.14, 2005

This architectural floor plan illustrates the layout of the first floor. The overall dimensions are 14,000 units in width and 6,000 units in depth. The plan is divided into several functional areas: a large central hall (HALL) with a staircase, a kitchen (KITCHEN) on the left, a dining area (DINING) in the center, and a living area (LIVING) on the right. There are also two bedrooms (BED) and a bathroom (BATH). The plan includes detailed wall lines, door swings, and furniture placement. Dimensions for each section are provided along the top and right edges.

[illegible][illegible]

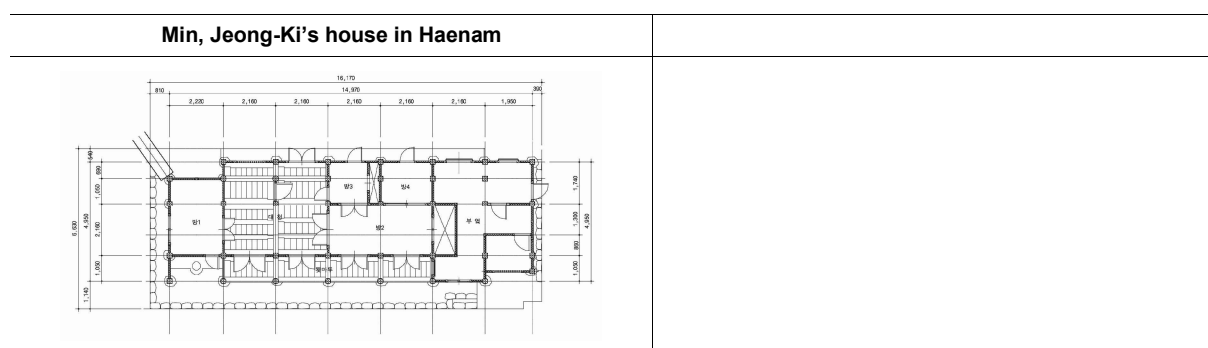


Fig. 3. House plane of investigation object of ‘- letter’ style main building of a house in Cholla-Namdo region

designated as a cultural heritage of Jeonnam province, Hong, Ki-Eung's house(important folklore materials No. 151) in Naju, Yoo, Jong-Heon's house(Cultural Properties Materials No. 192) in Damyang, Na, Sang-Yeol's house(important folklore materials No. 167) in Muan, Moon, Hyeong-Sik's house(important folklore materials No. 156) in Boseong, Cho, Soon-Tak's house(folklore materials No. 30 in Jeonnam province) in Suncheon, Lee, Kyu-Heon's house(folklore

materials No. 22 in Jeonnam province) in Yeonggwang, Choi, Seong-Ho's house(important folklore materials No. 164) in Yeongam, An Old house(important folklore materials No. 161) in Jangheung, Lee, Gyu-Haeng's house in Hampyeong(Cultural Properties Materials No. 150), Min, Jeong-Ki's house(Cultural Properties Materials No. 186) in Haenam. These houses are representative of each area.

Name of a House	Total Area(m ²)	Room(m ²)	Kitchen(m ²)	Main Floor(m ²)	Wood veranda(m ²)	Others(m ²)
	Ratio(%)	Ratio(%)	Ratio(%)	Ratio(%)	Ratio(%)	Ratio(%)
Gunjichonjeongsa in Gokseong	56.22	20.35	15.51	12.6	7.76	0
	100	36.20	27.59	22.41	13.80	0
Hong, Ki-Eung's house in Naju	86.03	28.78	20.11	19.19	17.95	0
	100	33.45	23.38	22.31	20.86	0
Yoo, Jong-Heon's house in Damyang	87.18	24.01	21.3	24.4	17.47	0
	100	27.54	24.43	27.99	20.04	0
Na, Sang-Yeol's house in Muan	116.48	31.97	31.43	21.16	31.92	0
	100	27.45	26.98	18.17	27.40	0
Moon, Hyeong-Sik's house in Boseong	84.36	29.2	11	19.6	18	6.56
	100	34.61	13.04	23.23	21.34	7.78
Cho, Soon-Tak's house in Suncheon	87.96	41.65	10.81	23.54	11.96	0
	100	47.35	12.29	26.76	13.60	0
Lee, Kyu-Heon's house in Yeonggwang	92.4	38.77	9.27	11.21	19.2	13.95
	100	41.96	10.03	12.13	20.78	15.10
Choi, Seong-Ho's house in Yeongam	63.71	20.35	17.25	10.91	15.2	0
	100	31.94	27.08	17.12	23.86	0
An Old house in Jangheung	102.9	33.09	26.17	26.54	13.82	3.28
	100	32.16	25.43	25.79	13.43	3.19
Lee, Gyu-Haeng's house in Hampyeong	94.32	29.97	24.39	18.72	18.36	2.88
	100	31.77	25.86	19.85	19.47	3.05
Min, Jeong-Ki's house in Haenam	71.79	23.98	19.56	16.85	9.07	2.33
	100	33.40	27.25	23.47	12.63	3.25

Fig. 4. Area ratio of house of investigation object of ‘- letter’ style main building of a house in Cholla-Namdo region

3. PLANE ANALYSIS OF A ‘—’-STYLE HANOK IN JEONNAM PROVINCE

This research investigated with full size above 11 houses and analyzed the size of each room which is a plane component. As the result of calculating the average value of each room for total 11 houses, a room takes 34.35%, a kitchen 22.12%, a floor 21.75%, a wood veranda 18.84% and other area 2.94%. Thus, we can confirm that the biggest area is a room and the biggest area per single area is a kitchen because a room can be 3~5 rooms in a house but a kitchen is just one.

The most noticeable feature of a house in Jeonnam province is that a floor has been developed. According to the analyzed data, total floor ratio is 40.59% by summing a main floor(21.75%) and a wood veranda(18.84%). Accordingly, a house in Jeonnam is designed by giving relative importance to a floor because of its hot weather. There are also places such as a warehouse and a cubby hall for other component of a room.

4. CONCLUSION

In the north area, there are a lot of central or ‘田’-style houses because it is suitable for using heat when cooking without a wall between a kitchen and a room and it makes the face of a wall bordering cold outside air to small. In the central area, the most common housing configuration is a court yard-style or ‘ㄱ’-style house. In the south area, generally there are a lot of ‘—’-style houses constructed by considering hot weather of summer rather than coldness of winter.

The living style of Hanok is sedentary life style around an Ondol room. Also, people in Hanok can enjoy cool summer through a main floor room and it is convenient to communicate because there are rooms on the both sides of a main floor.

But, there are disadvantages due to absence of independence of a room, inconvenience of using a rest room and irrationality of a kitchen.

Therefore, we should keep Hanok which is one of our precious cultural heritages developing for a long time by supplementing these disadvantages and finding a way to use Hanok as a housing architecture to be maintained continuously.

This paper is a basic data in order to develop a standardized model of Hanok and it tries to know the optimum ratio of the configuration using by the configuration of each room and its area ratio through case study for a house in Jeonnam province.

As the result of the case study, it shows that the area ratio of each room consists of 34.35% of a room, 22.12% of a kitchen, 21.75% of a main floor, 18.84% of a wood veranda and 2.94% of others. According to the result, a room has the biggest area ratio and a kitchen has the biggest area as a single room.

In the future, the plane components and the ratio that the components take in a house should be considered by investigating other province except Jeonnam and a modern house system as well as an apartment, and then Hanok configuration that is suitable for modern people should be developed on a plane by modularizing the ratio.

ACKNOWLEDGEMENT

“This work was supported by the Korea Research Foundation Grant funded by the Korean Government(MOEHRD)" (The Regional Research Universities Program/Biohousing Research Institute)

REFERENCES

- [1] Kim, Ji-Min, Study for the plane style of a main building at a private house in

Jeonnam province, Architectural History Magazine volume No.14, 2005

- [2]Kim, Seong-Woo & Lee, So-Yoen, Study for the scale and the plane style of a traditional Korean-style house in Jeolla Province (around a bay Bangchon in Gwansan-eup, Jangheung-Gun, Jeonnam), Architectural Magazine Book volume No.2, 1993
- [3]Cheon, Deuk-Yeom & others, Study for the proportional features of the wall face of traditional housing architecture in Jeonnam, a collection of papers volume No.20 of KAAH(Association of Korean Architecture History), 2004
- [4]Chang, Dong-Guk & others, Research for the Arrangement of a Floor in a single-wing house with 4 rooms in Jeonnam, Architectural History Magazine volume No.16, 2007
- [5]Cheon, Deuk-Yeom, Study for the proportional system of the whole architecture about a traditional housing, a collection of papers volume No.44 of KAAH(Association of Korean Architecture History), 2005
- [6]Kim, Ji-Min, Study for Plane Development of 'Hanok' to be continued, a collection of papers volume No.22 of Architectural Institute of Korea, 2006