



# INTERNATIONAL ASSOCIATION FOR THE STUDY OF TRADITIONAL ENVIRONMENTS

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## WORKING PAPER SERIES

### HISTORIC HOUSES

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TRADITIONAL DWELLINGS AND SETTLEMENTS  
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# **Traditional Dwellings and Settlements**

Working Paper Series

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## **WHAT IS OURS: TRACES OF FOREIGN CULTURE SEEN IN TRADITIONAL ARCHITECTURE BUILT IN THE EARLY 20<sup>TH</sup> CENTURY**

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*Yura Kim*

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**WHAT IS OURS:  
TRACES OF FOREIGN CULTURE SEEN IN TRADITIONAL ARCHITECTURE BUILT IN  
THE EARLY 20TH CENTURY**



*This paper examines the extent and depth of research conducted on Japanese-style houses built in Korea during the early 20th century. Compared to other periods, there is less research on the content of modern architecture, constructed during a period of great historical changes. Each case is examined in terms of its restoration status, investigation details, and the historical background of modern architecture. Additionally, perspective from Japan, the country where the buildings originated, is added to show new possibilities in the interpretation of architecture. The purpose of this study is to reanalyze relics with special historical background from an objective perspective, considering the cultures of both nations, and reveal architectural features that are pertinent to that specific era.*

## **1. BACKGROUND**

### **1.1. Harbor Opening**

Until the opening of Busan Harbor in 1876, South Korea adhered to a strict national isolation policy, which limited trades with other countries and restricted foreign nationals from entering the country. Following the opening of Busan Harbor, a significant influx of Japanese people into Korea began. In 1878, the Japanese government established additional passport-issuing offices in Kyushu, near Busan, to accommodate the growing number of individuals entering Korea. Between the same year and 1881, the passport issuance fee, initially set at 2 Japanese yen, was lowered to 50 sen (where 1 yen equals 100 sen). In 1900, certain occupations were granted passport exemptions. Furthermore, starting from 1904, during the Russo-Japanese War, Japanese citizens were no longer required to carry their passports while in Korea<sup>1</sup>. This policy shift aimed to foster a Japanese community in the region and establish a significant influence<sup>2,3</sup>.

In 1876, when Busan Harbor first opened, the Japanese settlement occupied an area of 363,000 square meters. Over time, through land reclamation and gradual expansion, it grew significantly, reaching 18,117 square kilometers by 1905—almost 50 times its initial size<sup>4</sup>. By the signing of the Korea-Japan annexation treaty in 1910, there were around 170,000 Japanese residents in Korea. Many of these individuals were born in the western part of Japan, like Yamaguchi, Nagasaki, Fukuoka, Hiroshima, and Oita. Occupationally, 28% were involved in commerce, 21% in various miscellaneous work, and 15% served as government envoys<sup>5</sup>.

## 1.2. Japanese immigrants

Japanese settlement in Korea gained momentum towards the end of the 19th century, accelerating significantly after the Russo-Japanese War. In 1889, the gender ratio among Japanese residents in Seoul stood at 173 women to 354 men. By 1906, the numbers balanced out, with 5,277 women and 6,447 men. Additionally, in 1910, an examination of the population by age revealed a notable concentration of one-year-olds, indicating a steady increase in permanent residents over the years<sup>6</sup>.

Initially, when the port first opened, Japanese settlers in Korea relied heavily on imported food, including vegetables, from Japan, leading to high prices. However, with increased exports to Japan, affordable Korean rice began to be collected and distributed at open ports. Japanese residents in the area started buying and consuming this local rice. Additionally, around the time of the Annexation Treaty, the number of Japanese, Chinese, and Korean farmers purchasing and cultivating Japanese seeds near Seoul increased<sup>7</sup>. Japanese manufacturers also established themselves and produced soy sauce and sake locally. Consequently, Japanese individuals in Korea could obtain nearly identical items as those in Japan but at a 30% lower cost<sup>8</sup>.

The Japanese government provided various institutional and economic “conveniences” to facilitate Japanese people's travel and settlement in Korea. Employees of the Inspector-General's Office and the Board of Directors Offices received an “overseas allowance” equivalent to their standard salary. This allowance was also granted to government officials, including police officers, teachers, and company branch employees whose salaries exceeded those of counterparts in the same occupations in Japan<sup>9</sup>. However, the government's objectives did not entirely align with the intentions of the Japanese residents. Although people were encouraged to settle down, the number of individuals expected to return to the mainland after making a quick profit hardly decreased.

During this period, articles advocating for permanent settlement were circulated with titles such as “How can we cultivate an indigenous spirit?” and “Korea is no longer a place just for work. This is not the place to sing about leaving after making money. This land is our land. This land is the land of our tomb<sup>10</sup>. ” These articles indicated that the process of permanent settlement did not proceed seamlessly.

## 1.3. Rice situation in Japan

During the get-rich-quick movements of that period, rice farmers stood out as the most prominent group. Land prices in Korea at the time were remarkably low, approximately 1/10 to 1/30 of those in Japan. Historical records indicate that in the early 1900s, 10,000 square meters of land could be acquired for about 5 yen. Considering the income data provided in the referenced table, the land was incredibly inexpensive. Due

to the exceptionally low costs of both land and labor, the cost of land improvement projects related to rice cultivation in Korea were only 40% compared to 17% of that in Japan. This stark difference in costs led the Japanese government to initiate and undertake extensive land improvement projects in Korea<sup>11, 12</sup>.

What drove the urgent need for rice in Japan initially? Rice stands as Japan's staple food, and in modern times, Japanese rice is highly praised for its quality. Despite the importation of various food items today, Japan still achieves a 100% self-sufficiency rate for rice. However, during the 20th century, there were periods when achieving this 100% self-sufficiency rate posed a challenge.

Rice exports began in 1873, and by 1878 and 1888, they had surpassed tea, becoming the top export. This surge in rice exports was spurred by a sharp drop in rice prices following several years of abundant harvests. Remarkably, despite these exports, Japan's domestic self-sufficiency rate for rice remained above 100%<sup>13, 14</sup>.

Ironically, rice imports commenced in 1889, the very year following the peak of rice exports. A significant drop in harvests to 85% of the average of the previous three years occurred due to flooding caused by a rainstorm, leading to a sharp decline in rice prices. Consequently, 1.93 million koku (approximately 290,000 tons) of rice was imported the following year to address the shortage<sup>15</sup>. Subsequent years in 1897 and 1898, crop failures happened again due to floods, causing another large-scale rice imports to be necessary. The volume of imported rice gradually increased, not merely to compensate for shortages caused by natural disasters. In fact, Japan's rice self-sufficiency rate fell below 100% in the 1890s, dropping to 94% in the 1910s and further down to 85% in 1930<sup>16, 17</sup>.

The decline in Japan's self-sufficiency rate can be attributed to several factors, one of which is the rise in population and rice consumption. Over a span of 20 years, from (1876-1885) to (1896-1905), the population surged by 1.21 times, accompanied by a corresponding 1.21 times increase in per capita rice consumption. In other words, Japan's total rice consumption increased by 50%<sup>18</sup>.

The second reason for the decline in Japan's self-sufficiency rate was the growing popularity of imported rice. Records from 1917 show that 48% of rice was imported from Korea, 31% from Taiwan, and 21% from other countries, including British India (Burma), French Indochina, and Thailand<sup>19</sup>. Remarkably, it might be hard to believe given the high quality of Japanese rice today, but in the early 1920s, rice from the northern regions of Japan was so poor in quality that it was considered "Tori Matagi Mai," meaning it was so bad that even chickens could not eat it. Japanese rice faced unpopularity in the market, losing out to the deliciousness of rice from Taiwan and Korea<sup>20</sup>. During that period, agricultural practices suitable for colder regions had not yet been developed, and the military conscription of young people took away the primary source of

agricultural labor. Consequently, rice farming in Japan declined while wheat, requiring less care, gained popularity. This situation left Japan with no choice but to rely on rice from overseas, primarily from Korea.

In 1918, rice prices surged again following two consecutive years of poor harvests, leading to rice riots in Toyama and other areas. To deal with the shortage, the government attempted large-scale rice imports from overseas. However, these efforts faced challenges as export restrictions and bans were imposed due to crop failures caused by floods and droughts in rice-producing regions abroad, making imports difficult<sup>19</sup>. During this period, rice injection from the colonies could have served as a viable temporary solution. Between 1910 and 1930, the per capita rice consumption in Japan remained relatively stable at around 1.1 koku per year. In contrast, rice consumption per person in Korea sharply declined from 0.77 koku in 1912 to 0.40 koku in 1932. (Note: 1 koku = 150 kg) It's important to note that this trend differed from the active commercialization of rice by Korean farmers themselves<sup>11</sup>.

The unfortunate event, covered in many Korean studies and media, was not merely the result of profit-seeking businessmen. It was a desperate attempt to address Japan's domestic crisis. Given this situation, rice farm management in Korea had no alternative but to thrive under these circumstances.

#### **1.4. Rice farm in Korea**

Figure 1 is a map highlighting the significant regions where Japanese immigrants settled, with specific focus on Seoul, Incheon, Busan, and Daegu. It took them a relatively short span of time (40 to 50 years) to establish communities and settle throughout Korea<sup>21</sup>.

1. Seoul and Incheon (Upper Left) - Two overlapping blue circles indicate the Seoul region, the capital city, and its gateway port town, Incheon.
2. Busan (Bottom Right) - A large blue circle represents the Gyeongsangnam-do area, which includes the city of Busan. Busan, being a major port city near Japan, was among the first areas to open its port in 1876.
3. Daegu (Above Busan) - A blue circle slightly above Busan in the Gyeongsangbuk-do area represents Daegu, a traditional metropolis in the eastern region of Korea.

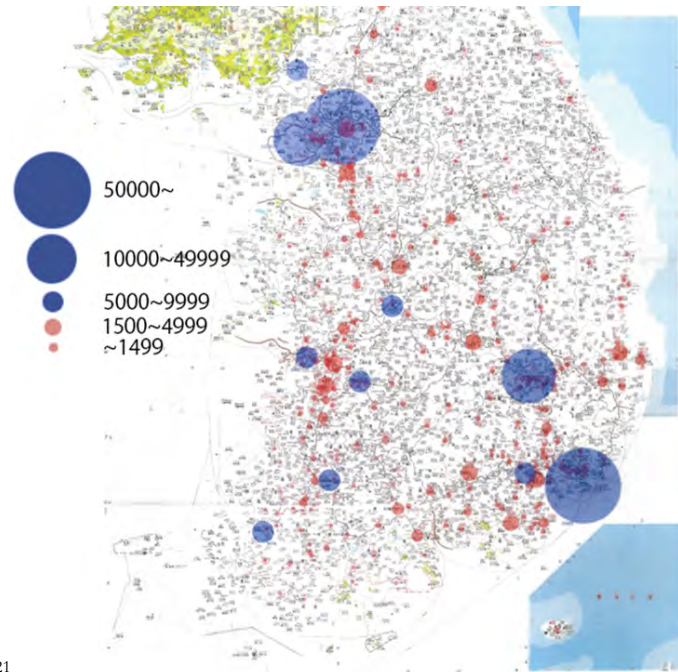


Figure 1. Population of Japanese in Korea in 1938<sup>21</sup>

In the bottom left of Figure 1, a different trend in the distribution of Japanese people can be observed. Five small blue circles are distributed almost linearly from top to bottom, spanning from Daejeon, a region characterized by extensive flat terrain, through the Honam Plain, Korea's primary grain-producing area, and finally to the Naju Plain, the second-largest plain in the region. Notably, this area shows a concentration of small blue circles and large red circles in the middle. This specific region is Jeollabuk-do, home of the Honam Plain, which stands as Korea's largest granary, abundant with rice fields. The Honam Plain stretches approximately 50 km from east to west and 80 km from north to south, covering one-third of Jeollabuk-do's landmass.

As previously stated, Japan implemented a plan to expand rice yields in Korea to resolve its food shortage issue. The concentrated small circles on the map represent rice farms owned by Japanese individuals who followed the expansion plan. In Jeollabuk-do, numerous Japanese investors purchased farmland and hired Korean sharecroppers to run rice farms. They undertook various infrastructural developments, including road construction, laying down railroad tracks, and building farming villages to enhance the efficiency of farm management.

Table 1 provides a comprehensive overview of Japanese landownership in Hwaho-ri, Jeollabuk-do, including details about the number of landowners and the timeframes of their ownership. In particular, Kumamoto, Rihei, and Taue, Taro at the top of the list, were widely distributed<sup>22</sup>. Rihei Kumamoto, recognized as one of the most influential farmers in Korea during that period, had ambitious plans for Hwaho-ri. He envisioned



building a farming village, complete with his residence, a manager's house, tenant farmer accommodations, a hospital, and a police station. This article focuses on the architectural developments in the rural areas of Jeollabuk-do.

Table 1. Person or Company who bought farmland in Hwaho-ri, when and for how much (Unit:  $m^2$ )

Name Year	Person/ Company who bought farmland in Hwaho-ri (Unit: $m^2$ )									
	Kunamoto, Rhei	Tae, Taro	Osawa, Shinzo	Fukui, Masatoshi	Nishimura, Mitsuo	Nishimura, Tamotsu	Nishimura, Toshiaki	Mizuta, Genzaburo	Higashitsu Irrigation Association	Oriental Development Company
1914	19,230		39,511					48,592	4,807	319,735
1917	46			400			228	982		
1918	3,203							68,152		
1919	3,828									
1920	3,980									
1921		476		625	559					
1922	337	44,198	1276			486				
1923	7,963	730								
1924	1,851					136		20,013		
1926	125	114,965			11,656	684				3,098
1927				446						
1928	5,285	3,028				23,263				
1929		211			1517				1825	255
1930	3,282	13,544	212		8,185		218		15,018	3,878
1931	2,261	10,225				40	1448		1309	
1932	5,676	195,220	1,150		195,220		192		86	
1933					955		582			
1934	5,847	42,145								
1935	165	5,765			141,583		1,246			
1936	5,087			33	4,215				734	
1937		4,126		1471	10,562				962	
1938	4,631			13,701	2,982				1,802	
1939		4,301		714	1517					
1940				19,861					66	
1941		916					73,775			

Many Japanese people who came to Korea constructed Japanese buildings in the architectural style, known as Iksik architecture (Japanese-style architecture) or Jeoksan architecture (enemy-produced architecture), which can still be found across the country today. However, due to their association with a contentious historical period, these structures have faced neglect and been deteriorating. Urban redevelopment efforts have been ongoing, often lacking comprehensive research. From time to time, there have been attempts to restore these Japanese-style buildings, but in many cases, initiatives have been abandoned due to limited understanding or political reasons. This abandonment poses a significant risk to valuable cultural heritage. Notably, a majority of these structures are wooden houses, some exceeding a century in age and therefore facing the highest risk of extinction among all Japanese-style houses. This research aims to investigate these Japanese-style wooden houses, shedding light on their historical context and the lives of the Japanese people during that period.

## **2. JAPANESE STYLE ARCHITECTURE IN KOREA**

Many Japanese people who came to Korea constructed Japanese buildings in the architectural style, known as Iksik architecture (Japanese-style architecture) or Jeoksan architecture (enemy-produced architecture), which can still be found across the country today. However, due to their association with a contentious historical period, these structures have faced neglect and been deteriorating. Urban redevelopment efforts have been ongoing, often lacking comprehensive research. From time to time, there have been attempts to restore these Japanese-style buildings, but in many cases, initiatives have been abandoned due to limited understanding or political reasons. This abandonment poses a significant risk to valuable cultural heritage. Notably, a majority of these structures are wooden houses, some exceeding a century in age and therefore facing the highest risk of extinction among all Japanese-style houses. This research aims to investigate these Japanese-style wooden houses, shedding light on their historical context and the lives of the Japanese people during that period.

### **2.1. Japanese conventional wooden method housing**

Most Japanese-style wooden houses primarily utilize the "conventional wooden method." However, this so-called "conventional wooden method" commonly used in today's wooden houses inherited the construction method of traditional Japanese wooden houses while differs from the traditional building method of centuries ago. It is a construction method that was newly emerged during the period of significant changes in Japan, spanning from the Meiji period to the Taisho period when the Edo period's carpentry techniques, systems, and organizations collapsed. The "conventional wooden method" as we know it today was perfected around the 1920s, and it differs from the housing designs of the late Edo period<sup>23</sup>.

Many predecessors of the traditional wooden structure were built in Korea. Many of the Japanese-style houses in South Korea are notably well-constructed with high quality and despite their age, they have retained many of their original parts and features. It also featured the latest Japanese design at that time and is a model of traditional construction in the early 20th century<sup>24</sup>.

### **2.2. Cold winter of Korea**

However, Japanese-style housing faced challenges in adapting to Korea's climate and natural conditions. Particularly, Korean winters are harsher than those in Japan. For instance, Seoul experiences temperatures as low as -17°C in January, with Jeollabuk Province dropping to -15°C, even colder than Aomori, northernmost tip of Japan's main island. Even in Busan, the southernmost city besides Jeju Island, temperatures can drop to -10°C. As mentioned earlier, most Japanese originated from milder regions like Osaka, Hiroshima, and

Kyushu, where temperatures seldom dip below -5°C. Consequently, they found it difficult to acclimate to Korea's severe cold. Additionally, Korea is generally drier than Japan, and in winter, cold winds from the northern continent further intensify the cold, making the sensible temperature even colder<sup>25</sup>.

During the Russo-Japanese War period in Busan, "the entire town was full of Japanese-style houses," while the resident office, chamber of commerce, and product display hall were Western-style houses<sup>26</sup>. However, these housing distinctions were significantly influenced by social class. Especially in severely cold regions like Seoul, the following descriptions can be found:

"The wealthy people built their Western houses with wall fireplaces, installed gas stoves in their Japanese houses, or installed ondol systems (a Korean heating system that provides heat from under the floor)."

"Executives of the Grand Government Federation and bank companies and above are given a splendid Western-style house with a Japanese-style house as their official residence or residence. For convenience, one ondol room is installed."

The upper classes enjoyed the luxury of diverse heating options, allowing a harmonious coexistence of Japanese, Western, and Korean architectural styles. Contrastingly, the middle-class citizens, along with low-level management officials, and employees of banks and companies, lived in Japanese-style homes equipped with gas stoves, Japanese Kotatsu, and Ondol rooms, but no Western-style. The lower class, comprising civil servants, small merchants, lower level bank employees, police officers, and elementary school teachers, lived in existing Korean houses with only Ondol rooms. Additionally, single individuals lived in one room, even in a cold Japanese-style house<sup>27</sup>.

### **2.3. Ondol in Japanese style housing**

The ideal lifestyle was to live in a Japanese-style Tatami room during the spring, summer, and fall, then switch to a Korean-style Ondol room in winter. However, this lifestyle was only accessible to the middle class and above<sup>28</sup> and adjusting to Ondol heating proved challenging as people often experienced dizziness and headaches before getting used to Ondol<sup>29</sup>. The dizziness and headaches are believed to result from smoke and carbon monoxide seeping through the floor when the Ondol heating system was in use. There were stories being circulated about Ondol rooms becoming intensely hot when the fire was lit, but cooling rapidly overnight to the extent that the room's water would freeze. This was a common occurrence when repairs were neglected in Ondol rooms and insulation of the Ondol room was not adequate in Japanese-style housing. Many of these issues were attributed to foreign designers who were unfamiliar with the intricacies of Ondol systems and might have made mistakes during construction.

Figure 2. Structure of Ondol



There are no complete examples of Ondol rooms left in existing Japanese-style buildings. In the case of Japanese-style houses that Koreans continued to use after World War II, the Ondol rooms were converted into briquette boiler rooms and later into hot water boiler rooms. In houses that remained unused, mainly in undeveloped and rural areas, the floors of the Ondol rooms have collapsed while other sections of the houses have remained. Therefore, it is challenging to research what kind of construction methods were used and even considering the floor collapse, it has been determined to be a construction error.

Considering Ondol's structure, the issue of floor collapse in Ondol rooms might not solely be a construction error. Korean housing relies heavily on wooden structures and incorporates a significant amount of soil, an overwhelming contrast to Japanese wooden houses. While Japanese homes also feature soil walls, the extent of soil usage in Korean houses is notably greater. In Korean housing, substantial amounts of soil are not only used for walls but also for floors and ceilings, essentially forming a single piece of earthenware. Ondol system operates by igniting a fire beneath this earthen structure, heating the floor through a chimney. Therefore, care is taken to ensure that wood is not exposed except in spaces where heating is not required.

While modern soil blocks have been commercialized, construction was traditionally done by applying and hardening large amounts of soil. Naturally, a core made of ropes, straw branches, or, in some instances, stacked stone blocks covered with soil was needed to coat with soil. To increase soil adhesion, grass-based fibers were mixed with the soil. However, it was impossible to mix flammable materials with the floor where

the fire would be set under. Therefore, the floor of Ondol rooms was constructed with a space for smoke passage using stones, and a thick layer of soil was applied over these stones. This essentially formed a robust, hardened soil floor for Ondol room. Winter repairs were necessary every year to fix cracks in the floor, and neglecting maintenance for extended periods could cause the floor to fall out over time.

Figure 3. Inside of Ondol structure. Left is showing the inside of the soil wall. Middle is the fireplace, Agoong-i, is under construction. Right is Installation of Gudle stone. Smoke would go under these stones and heat the floor. Soil would cover later.



As previously stated, only the middle class and wealthier individuals had the means to live in Japanese-style houses with Ondol rooms. They had the financial resources to import all necessary building materials from Japan, including specific wood types like cypress, which was not locally produced in Jeollabuk-do.

Additionally, it was easy to hire local Koreans who were familiar with Ondol construction. Therefore, the theory suggesting that construction issues were due to a lack of knowledge about Ondol seems unconvincing, given the availability of skilled local labor at that time.

According to the literature referenced earlier<sup>26</sup>, it seems that Ondol was made into only one room in Japanese-style houses, which was sufficient for winter use as they were only there for the winter. However, a fundamental distinction exists between Korean and Japanese housing, primarily concerning heat storage capacity and the amount of soil usage. In Korean houses, the heat not only warms the floor but also the lower part of connected walls, leading to prolonged heat retention beneath the floor. In contrast, Ondol rooms in Japanese-style houses were enclosed by wooden inner walls to be in line with Japanese-style interior. This setup, coupled with potential heat loss through thermal bridges, led to rapid cooling of the smoke under the floor, potentially causing condensation due to the contrast between cold walls and warm air. This increased humidity under the floor might have made it difficult for smoke to escape through chimneys, resulting in increased pressure and easier leakage into the room.

### 3. CASE STUDY

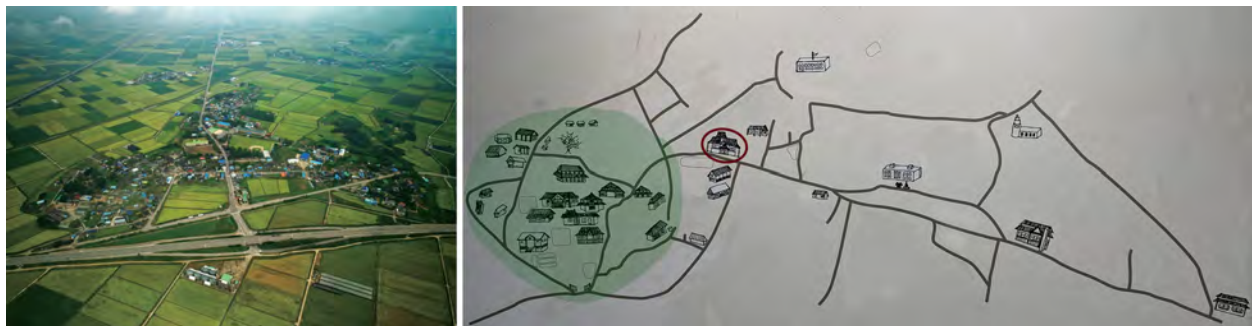
#### 3.1. Kumamoto Farmhouse in Hwaho-ri

##### 3.1.1. History of Kumamoto farm and Hwaho-ri

It is said to be that Rihei Kumamoto came to Korea in 1903 and successfully bid for land near Gunsan Port, a newly opened a habitable area for Japanese people. He expanded his land by purchasing farmland in Gaejeong, near Gunsan and started a rice farm. Over time, he continued to purchase land and by 1932, he became a substantial landowner covering 3300 hectares across Okgu, Gimje, Buan, Jeongeup, and Wanju regions. Kumamoto built farm housing and planned a village for management in each area. Hwaho-ri Jeongeup, one of the case studies presented in this paper, is where villages have remained the most intact among the five regions. This is attributed to the fact that village declined after the relocation of the local hospital building, which resulted in its exclusion from future urban development boom.

In 1905, Kumamoto came to Hwaho-ri and built his residence near the sacred tree at the highest point in the village. Just below, his manager's housing was constructed, followed by first-class, second-class, and third-class company housings further down. It is also said that there was a large grain warehouse at the edge of the village. Kumamoto also built a hospital accessible to all tenant farmers for free, enhancing the farm's efficiency. Moreover, despite Hwaho-ri's distance from the city, he used his influence in the community to establish a village police office. In addition to Kumamoto, there were other Japanese landowners in Hwaho-ri situated east of Kumamoto Farm Village. It was known as Hwaho-ri's booming high street filled with stores, where the original shop buildings still stand today.

Figure 4. The panoramic view of Hwaho-ri in 2002 (left) and the map of the remaining Japanese houses and building sites in Hwaho-ri<sup>30</sup> (right.) The green area is the Kumamoto farm administrative buildings, and the red circle is the house of Taue Taro, the owner of another rice farm in Hwaho-ri.



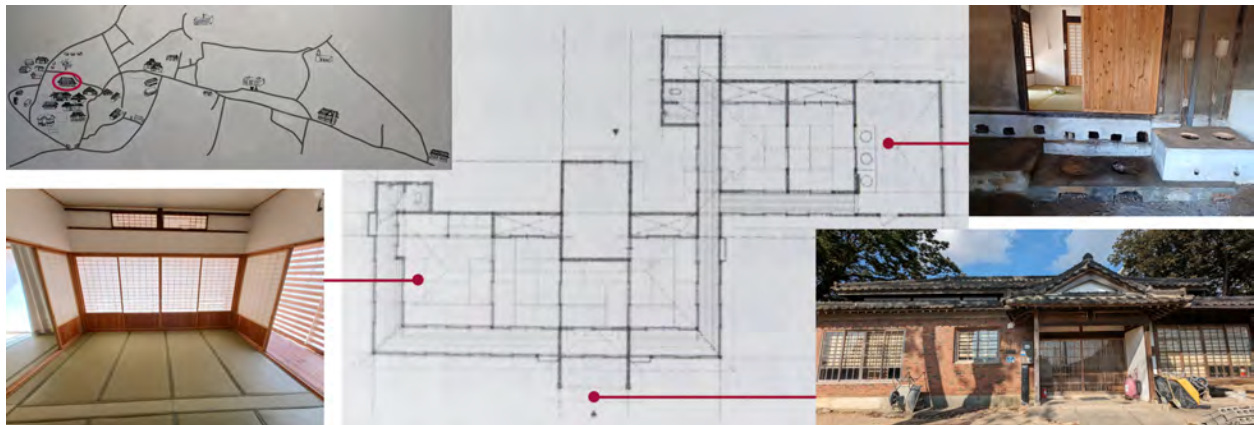


### 3.1.2. Kumamoto Farmhouse: original and current

The exact construction year of the house is still being determined, but Kumamoto arrived in Hwaho-ri around 1905 and according to villagers' interviews, the house was built around 1910. The house comprises two buildings connected by a corridor. Kumamoto mainly used the southwest building, while the east building was designated for the managers. The main gate is located to the south, followed by a corridor hallway. Along the corridor facing south, there are four tatami rooms, and to the north, there is a space believed to be used as a kitchen in the past. It's worth noting that by the time of the investigation, many extensions and renovations had already taken place, and the original structure did not remain. On the east side, there are two rooms where the managers lived, with a large dirt-floored kitchen next to it.

This house has been meticulously restored and now serves as a tourist facility. On the southern facade, the right side features a hallway with glass slide door screens, while the left side is enclosed by a red brick wall. This brick wall was reconstructed by a Korean family that settled here after the war. According to interviews with villagers, Dr. Sung-hwan Kim, who worked at Kumamoto farm hospital, lived in the managers' quarters and eventually became the owner of the house after World War II. Dr. Kim was a remarkably generous individual. Recognizing the lack of resting places for farmers near the area during the busy farming seasons, he opened up the entire west side of the house. Here, he provided a welcoming space for anyone in need of rest, accompanied by simple snacks. At that time, the west side lacked a brick wall and was surrounded by glass slide door screens, similar to those on the east side.

Figure 5. Plan and pictures of Kumamoto farmhouse. The bottom left is the main tatami room and the upper right is Ondol room where the managers lived.



### 3.13. What is original? Restoring tatami room

The interior of the house has been “restored to reflect a Japanese style”, with some of the remaining fittings replaced with new wood. All the rooms have been rebuilt into tatami rooms, featuring brand new tatami mats. The size of one tatami mat is 1800mm x 900mm. However, the tatami mats are not enough to cover the entire space, so additional irregular-sized tatami mats have been added to fill the space.

The current tatami mats were custom-made, crafted by covering square wood with tatami skin. The specific size of 1800mm x 900mm was chosen purposefully. In Japan, there are four main types of tatami mat sizes: Kyo-ma, Chukyo-ma, Edo-ma, and Danchi-ma. Japan’s unique dimensions are complicated numbers expressed in millimeters. In modern Japan, the standard tatami size is precisely measured as 1800mm x 900mm. This measurement originated from Chukyo-ma, which was 1820mm x 910mm, or more precisely, 1818cm (6 shaku) x 909cm. Chukyo-ma was traditionally used in the Chubu region of Japan, particularly in areas centered around Nagoya. Its dimensions fall between those of Kyo-ma and Edo-ma.

However, the dimensions of 1800mm x 900mm serve merely as a standard in real estate to denote room size. In contemporary homes, the size of tatami mats can differ because modern houses are designed based on the distance between the center of pillars with meter modules. Had someone familiar with Japanese culture been involved in the restoration work, they might have provided precise measurements when ordering the mats and avoided the situation reminiscent of a Tetris game (Figure 5).

The inner dimension between the pillars in the main tatami room measures 3820mm, indicating that each tatami mat would be 1910 cm x 955 cm, likely creating a Kyo-ma room. Kyo-ma is a style that originated in Kyoto and spread in western Japan. Considering that many Japanese people who came to Korea were from western Japan, many of the carpenters were also from that region. The former owner of this house, Rihei Kumamoto, was also from Kagoshima Prefecture in Kyushu, western Japan. These details strongly suggest that this house was built as a module in western Japan.

The defining characteristic of a Kyo-ma style room lies in the modules that are divided between pillars, ensuring a seamless arrangement of tatami, doors, windows, and the ceiling. In contrast, Edo-ma style uses the modules divided at the center of pillars, resulting in slight misalignment of the line. However, in Kumamoto's farmhouse, likely constructed in a Kyoto-style room, this beauty of the alignment of lines cannot be seen.

Another distinctive feature of the main tatami room is the strange floating effect of the tatami mats. These mats, measuring 55mm in thickness, are the same as those used in Kyo-ma style rooms. In other tatami



rooms, the height difference between the floor and the threshold is also 55mm, indicating that the tatami mat thickness itself isn't the issue. However, under these mats, insulation material is laid out. This insulation material is new and was likely added during the restoration process to convert the property into a heritage site. Since air conditioners were also installed in other rooms and buildings, there was an intention to use this room for more than just display purposes. The insulation was necessary due to the cold temperature inside the house.

#### **3.1.4. Ondol room in the farmhouse**

The manager's space on the eastern side of the house comprises two folding rooms and a kitchen. During the restoration process, the room next to the kitchen was equipped with a briquette boiler, a floor-heating device developed in 1962. This innovative system utilizes metal water pipes beneath the floor, circulating hot water boiled with charcoal briquettes through the pipes to warm the floor, laying the foundation for modern Korean floor heating systems. Considering the timing, it appears that this addition was implemented by Koreans during a renovation phase. Similar to the tatami room on the western side, this area was also refurbished with tatami mats to embrace the traditional Japanese style.

However, as illustrated in Figure 5, the section presumed to be Agoong-i, the fireplace, appears to be partially buried, suggesting that this room might have previously been equipped with traditional Ondol. There is a possibility that the Ondol room was later installed by Koreans. To achieve this, it is necessary to construct Agoong-i for starting a fire, Gore for smoke to pass through stones, Gudle to be heated by smoke and a chimney. If the space under the floor matches that of a typical Japanese house, there might not be sufficient depth to install these components. Therefore, digging deep into an entire room and the dirt floor of the kitchen would be necessary in such a scenario. If this were the case, preserving the original structure would prove to be exceptionally challenging.

As detailed in Chapter 1, it was a common practice among the middle class in Japanese households of that era to have one Ondol room. Given the absence of any other heating apparatus in the house, it is possible that an Ondol was already installed in this easternmost room when Japanese lived here.

In the west side of the house, which Kumamoto himself used, had no architectural heating system like a western fireplace or Ondol. The dirt floor space behind the four rooms near the entrance has undergone extensive renovations and completely lost its original appearance. However, if any of the four tatami rooms had an Ondol system installed, the difference would have been clearly noticeable under the floor. Interviews with residents indicated that Kumamoto only visited this space about once every two months for debriefing sessions. As mentioned in Chapter 1, the best practice for Japanese people during that time was to spend

spring, summer, and autumn on tatami mats and rely on Ondol during winter. It is possible that Kumamoto did not intend to reside in this house during the winter after the harvest. Therefore, it would not be surprising if the Ondol system was only placed in the space used by the resident manager.

### **3.1.5. Residential security**

Based on interviews with residents, the construction of second and third grade company housing occurred in the 1930s. This initiative followed a farmers' strike, which had been triggered by dissatisfaction with excessively high farmland rents. In fact, in the 1930s, Kumamoto began to provide welfare benefits to farmers by building hospitals and establishing a scholarship system. The construction of company housing served a dual purpose, acting as both a welfare measure and a means of supervision. Additionally, as mentioned earlier, Kumamoto was conscious of safety when he was planning this village and even went to the extent of building a police office.

There is a story from villagers that after World War II, a resident of the Kumamoto farmhouse climbed into the attic and stumbled upon a Japanese sword hidden inside. This sword was later sold for a substantial sum of 3 million Korean won. To put this into perspective, during the 1980s, ordinary homes in Jeonju, the largest city in Jeollabuk-do, were typically sold for around 1 million won, underscoring the exceptional quality and value of the sword. In Japan, the possession of swords by civilians had been prohibited since 1876. Only law enforcement and military personnel were permitted to carry them, and this regulation was met with initial resistance, especially from samurai accustomed to their swords. It took considerable time for this prohibition to be strictly enforced. Kumamoto's cautious approach to security is evident in his decision to hide the sword in a house where he hardly spent time.

This awareness of safety was not unique to Kumamoto alone; it was also evident in other landowners in Hwaho-ri. For instance, Taro Taue's house, which had now been demolished, was located east of the Kumamoto farm village (Figure 4). Although Taue's house was repurposed as a post office after World War II, it eventually deteriorated and was demolished several years ago. In 2009, Professor Naito from Chubu University in Japan conducted an actual measurement survey of the building. It revealed that the building was a two-story, mid-corridor style house, typical of the Japanese conventional wooden method housing.

In Hwaho-ri, Taro Taue's land was larger than Kumamoto's. However, unlike many Japanese builders who often built higher structures than surroundings, Taue opted for a different approach. He built his house on a flat high street. The Jeongeup Modern History Museum in Hwaho-ri provides insights, explaining that Taue Taro's decision to construct a two-story house was influenced by the Japanese ruling class's preference for

elevated locations, allowing him to oversee his property. This reasoning was derived from the fact that Taue also utilized his house as a farm office and interviewed with villagers, suggesting that he mainly lived on the second floor.

In 2009, at the time of the measurement survey, the first floor, once utilized as a post office, had unfortunately undergone extensive renovations. Apart from the hallway and water area, most parts of the first floor had been modified, erasing any traces of its original structure. Furthermore, due to prolonged neglect, the building had fallen into a state of disrepair, making it difficult to recognize the original structure. However, the second floor remained largely intact, preserving its original appearance since its construction. Naturally, there was no Tokonoma on the second floor, but on the first floor, a pillar resembling a Tokonoma was present. This suggests that the main tatami room was originally located on the first floor when the house was initially built.

Considering Japanese customs, rich individuals and aristocrats typically favored single-story residences, while multi-story buildings are often associated with merchant houses. Merchants' residences must be located along roadsides due to the nature of their businesses, leading to a scarcity of available land. It is hard to imagine that Taue, a large landowner, would face land shortages and resulting in building a two-story house. Unlike Kumamoto, Taue's location is not a farm village and doesn't offer the same security benefits. If he purchased a large plot of land away from the downtown area, then security could be compromised. Therefore, Taue's decision to build a house combining both office and living space on a crowded street might be due to enhanced security and it may have influenced him to move to the second floor.

As discussed in chapter one, the number of permanent settlers in Korea did not increase significantly despite the government's efforts. One possible factor that hindered permanent settlement could be the great anxiety about resident security.

## **3.2. Kumamoto Villa Gaejeong**

### **3.2.1. History**

This house is the main branch of Kumamoto Farm in Gaejeong, also known as Kumamoto's villa. It features a rare eclectic house of Western-style rooms, traditional Japanese spaces, and even an Ondol room. The house is full of imported furnitures and decorations from overseas, making it an exceptionally expensive property. Its luxurious style is often compared to that of the Japanese Government-General of Korea. In the 1930s, there used to be a farm manager's company house and a clinic near this villa. However, today, this house stands as the only remaining Japanese-style house in the area, located on the grounds of Gaejeong hospital. Following World War II, Dr. Lee Yeongchun, a dedicated physician, worked at Kumamoto Farm Hospital

(the same free clinic for farmers mentioned earlier) along with Dr. Sung-hwan Kim, who resided in Kumamoto Farm House. Rihei Kumamoto held great trust in Dr. Lee and before Kumamoto's return to Japan, he expressed his wish for Dr. Lee to inherit the house. Dr. Lee made significant contributions to the Korean medical community, particularly in promoting hygiene and health among farmers. He centered his medical activities in Gaejeong and transformed the surrounding area into a hospital. Revered by the Korean community, Dr. Lee's residence was never subjected to violence, much like the Kumamoto farmhouse. It continued to be the home of Dr. Lee and his family. In 2011, the villa underwent renovation and was transformed into an exhibition hall open to visitors.

Nevertheless, the house underwent a transformation not into a residential dwelling but into a memorial hall honoring Dr. Lee. The ondol room, hallway, and kitchen space were completely converted into exhibition rooms and offices, losing their original function as a residential house. There were at least two professional site inspections before the building made transition into its present state. In 2009, Hanyang University conducted an actual measurement survey for the construction of the exhibition hall<sup>31</sup>. Earlier, in 2004, Professor Naito from Chubu University, conducted a survey of the house and interviewed its residents<sup>32</sup>. During Professor Naito's visit, Dr. Lee's family still resided there, preventing him from examining the interior of the tatami room. Part of his research findings was utilized in the graduation thesis of a university student with whom he collaborated.

A large Western-style reception room is directly connected to the front gate with a wall fireplace located on the northern side of the room. This reception room is connected to the central hallway, which connects the Ondol room and the tatami room. At the end of the hallway, the kitchen and bathroom can be found. However, during Professor Naito's visit in 2004, the wall between the Ondol room and the hallway had already been cleared, transforming the area into a large dining room. Subsequently, Professor Naito created a reconstruction map based on actual measurement data and conducted an interview. The Ondol room, as depicted in the restored drawings, is a compact room measuring approximately 2.5 meters by 2.5 meters. During the 2009 survey, the floor under the dining room had undergone extensive remodeling, making it impossible to identify its original shape. Restoration to its original state was deemed impossible. Currently, the area has been transformed into an exhibition space, finished with polished wooden flooring.

Figure 6. In the reconstruction map<sup>32</sup>, blue is the reception room, yellow is the study, green is the tatami room, and red is the Ondol room. Traditional Japanese techniques can be seen from the Yukimi shoji window<sup>33</sup> (top left) and the Ajiro ceiling<sup>34</sup> (top right.)



### 3.2.2. Registration information

This building is believed to be the first in Korea constructed using metric measurements. Based on information from Dr. Lee's son and Dr. Lee's autobiography<sup>35</sup>, the Kumamoto villa was built in 1923. However, the exact completion date remains unclear, thus it is adequate to assume it was completed in the 1920s. When Professor Naito's measured the external fittings of the tatami room (as he couldn't access the interior), he pointed out the possibility of it being a Kyo-ma style. Additionally, the Hanyang University report revealed the use of a 1,960mm module, which is used in Western Japan. Although the former Japanese-style room no longer features tatami mats, the internal dimensions of its pillars (3,920 mm) match those of the Hwaho-ri farmhouse. In the case of Kyo-ma structures, the size of the tatami size is large, so adding the 120mm pillar thickness to the 3820mm pillar spacing results in a dimension between the centers of pillars at 3940mm, which can be considered close to the metric module. As the thickness of the columns increases, it aligns more closely with the metric module. Considering this wooden house was constructed several decades ago, potential discrepancies arise due to factors like the house's slope. And because of its Western-style appearance, it was concluded that metric modules were used in its construction.

The claim that the villa was designed by a French architect lacks credibility. For those unfamiliar with Japanese architecture, the exterior doesn't resemble a traditional Japanese house. While the tatami room has many traditional Japanese features, such as Yukimi shoji windows<sup>33</sup> on sliding doors and Ajiro ceilings<sup>34</sup> (Figure 6,) it was possible for a Western architect well-versed in Japanese architecture could incorporate these features. However, in 2004, when Professor Naito and the team inspected the attic, they confirmed the use of

traditional Japanese construction methods in the wooden roof structure. They also discovered Bantsuke<sup>36</sup> markings on the beams, a unique Japanese method used to identify building materials to clarify its positional relationship and coordination (Figure 7.) This evidence strongly suggests the villa was constructed by a Japanese carpenter rather than a Western architect. The report from Hanyang University mentioned the possibility of Yoshihei Nakamura's design team that was active in Gunsan at that time being the one that designed Kumamoto's villa. They had a foreign architect from Austria, Anton Martin Feller, but detailed investigations into such claim had not been conducted at the time.

Figure 7. Traditional Japanese construction methods in the roof structure (left,) Bantsuke<sup>36</sup> Marking (center) and Munahuda found in attic.



Munahuda was also discovered behind the attic(Figure 7.) Munahuda serves as both a protective talisman and a record of the building containing the construction information. This Munahuda was firmly affixed to the hut, allowing only the front to be visible, with the letters on the back remaining obscured. The visible portion on the front contained the names of Kumamoto and two ancient Japanese Gods but the year of construction and the architect's name were missing. The inscription in the center reads "Hojomune Daigensonjin Kamon Nagaku Eisho Shugosho," with "Mitsuhanome no Kami" on the right and "Goteiryujin" on the left. These inscriptions symbolize prayers for the long-lasting prosperity of the house without any fire incidents. These two Gods are commonly found on Munahuda and revered as Gods of water, particularly Mitsuhanome no Kami, who is also known as the God of rice harvest.

Munahuda serves as a record of building construction, with the design-related information written. In this case it is assumed to be written on the back. During Professor Naito's investigation, Munahuda was securely attached but it was possible to remove it. However, there was hesitation to modify something worthy as a talisman, so only a visual inspection of the back was conducted. Among the various inscriptions, the only readable word was "■■五十二歳."

Hanyang University's investigation report states, "I checked Munahuda and discovered that Rihei Kumamoto's name and the shrine's name are listed, but lacking the placement date and the construction team's names are not found" and "by investigating the Munahuda, the house was built in 1931." However, the absence of photographs raises uncertainties about whether they removed Munahuda and checked the back. Furthermore, the report did not clarify the methodology of investigation used to determine the 1931 construction date from Munahuda, which does not include any specific date. It's possible that they misinterpreted the God's name as a shrine's name and according to one of Professor Naito's student's thesis, the year 1931 may have been derived from the fact that "52 years old" represented Rihei Kumamoto's age in 1931. This interpretation assumed "sai" referred to age, although if it represented a year, "nen" would typically be used. There are some cases that the owner's age is written on Munahuda, but in such case, it is usually written under owner's name.

However, in Munahuda, the kanji "sai" can be used interchangeably with "nen" when denoting dates in the Japanese era name. While not common, this practice has existed for a long time and even in Munahuda dating back a thousand years, the kanji "sai" was used<sup>37</sup>. Typically, the Chinese sexagenary cycle accompanies these inscriptions, but that portion might be covered by the pillar. If the reference is to the 52nd year of the Showa era, the date corresponds to 1977, a period after World War II. The Taisho era, preceding the Showa era, only lasted 15 years. If the inscribed letters read "正十二歳" instead of "五十二歳," it could indicate the 12th year of the Taisho era (大正十二歳), aligning with 1923 and matching the construction year as testified by Dr. Lee.

There is another factor that led to Hanyang University's decision to report the construction year as 1931. In 2004, while examining the attic, wooden materials used for the roof displayed the trade name of a lumber shop along with its emblem stamped on them. The company's name was "Showa," indicating that the lumber shop had been in operation since at least 1926. Professor Naito, consulting the "Dai Nippon Shoko Roku 1930 edition," which cataloged all registered companies in Japan, discovered a similar emblem and company name. This particular business was established in 1927. This finding likely influenced the Hanyang University team's decision, as placing Munahuda in 1923 would have contradicted this evidence.

However, it's worth considering that Munahuda is typically placed after the frame of the building is erected, implying that the material with the company stamp would have been installed after Munahuda. This presents an unusual delay of 3-4 years. The year 1923 marked the occurrence of the Great Kantō earthquake with a magnitude of 7.9. This disaster likely disrupted the supply chain, making it challenging to obtain construction materials. In addition, the lumber company in discussion was headquartered in Sin-uiju, located at the

northern tip of North Korea. While Sin-uiju 's wood resources were primarily allocated for military supplies, the difficulties in bringing materials from Japan might have led Kumamoto to opt for the next viable option and purchase materials from Korea.

### **3.2.3. Ondol in high class house**

In the Hwaho-ri farmhouse, there is no architectural heating system in place for winter. This contrasts sharply with Kumamoto's villa, which boasts both a wall fireplace and an Ondol, reflecting the lifestyle of the upper class discussed in Chapter One. Close to the Hwahori farmhouse, remnants of old construction materials from Japanese-style houses are scattered around or repurposed in unexpected places. There is one restored Japanese-style house with stone steps in the front yard, and one of the stones appeared to have been used for the Gudle. According to the guide's explanation, this stone was part of the Gudle during the house's reconstruction. The portion protruding from the soil measured 15 cm, and considering the part that was buried, it was supposed to be quite thick.

If the Gudle stones are thick, it requires more time to heat up, so higher heat is needed. However, using high heat can cause the floor near Agoong-i to become excessively hot, making precise heat control necessary. Due to the stone's high heat capacity, it retains warmth for an extended period, but on the other hand, once it becomes hot, controlling the temperature becomes challenging. Consequently, these thick Gudle stones are often used in spacious rooms such as temples or palaces. In large rooms, although the vicinity near Agoong-i becomes very hot, the area near the chimney remains relatively cool, so there is no significant inconvenience living there.

The Koreans made modifications to the Ondol floor in Kumamoto villa, erasing any remnants that could provide insights into the original Ondol's structure and materials. The Ondol room in the villa is notably compact, with a chimney rising high above the roof, ensuring that flames would be strong. Due to its size, the room heats up quickly but also cools down fast. Using thick Gudle stones like those in Hwahori could potentially result in excessively high temperatures in the room.

The Ondol room was notably tiny compared to the other rooms in the villa. Positioned next to the tatami room, which was likely the primary bedroom, along the hallway, the warmth from the Ondol room would naturally spread to the tatami room when heated. The strategic placement of the Ondol room in the cold north and the short hallway would have aided in maintaining warmth not only in the Ondol space but also in the other spaces. As discussed in Chapter 1, there are cases where some Japanese individuals experienced dizziness and headaches in Ondol rooms due to their unfamiliarity with this heating system. Given



Kumamoto's limited time in Korea, he might have utilized the Ondol room primarily as a large heater rather than a room and opted to sleep in a tatami room.

#### **3.2.4. From a security perspective**

Considering the luxury of this building, its room count is surprisingly low. There are only two bedrooms, a Japanese-style room, and an ondol room, with no space for guests, children, or servants. It is also impractical to offer small Ondol rooms to customers. When compared to the numerous tatami rooms in the Hwaho-ri farmhouses, this building appears even smaller. According to a study conducted by Hanyang University, visitors likely had access only to the Western-style reception room and used the inner hallway to reach the toilet. There was also a study to the south, accessible directly from outside, enabling a swift reception of reports without granting entry to visitors. In fact, all four rooms of this villa (the Western-style room, Japanese-style room, Ondol room, and study) had direct access to the outdoors. Additionally, with a back door in the kitchen, the Kumamoto villa had exits from every direction—north, south, east, and west.

This house, known as the Gaejeong principal office of Kumamoto farm, differs from Taro Taue's farm office as Kumamoto did not permanently reside or conduct business here. This building is considered a "villa" due to its distinct design, neither resembling a typical residence nor a building primarily used for work, and also showing its luxurious style construction. Despite its classification and construction as a villa, Gaejeong is not an ideal tourist spot for building a vacation home.

Among the lands owned by Rihei Kumamoto, the farm in Gaejeong, where he built a villa, is surprisingly not the largest as Hwaho-ri is significantly larger in terms of land size. However, Gaejeong is closest to Gunsan Port, a pivotal departure point for ships heading to Japan and handling rice exports. When considering the convenience in both life and business, the city center of Gunsan would have been a more logical choice for the primary residence. Approximately ten kilometers east of Kumamoto villa lies Iksan railroad station, a significant hub connecting routes to Manchuria and Busan. The villa was located at middle point of Gunsan Port and Iksan Station, ensuring the direct evacuation route to Japan via the port and land transportation. In fact, after Korea gained independence in 1945, Gunsan Port ceased operations. Records indicate that many Japanese people in Gunsan escaped by taking the train from Iksan Station to Busan Port. Given these circumstances, it's conceivable that when Kumamoto planned to build this house, he designed it with a "safe house" in mind.

### **3.3. Hirotsu's House in Gunsan**

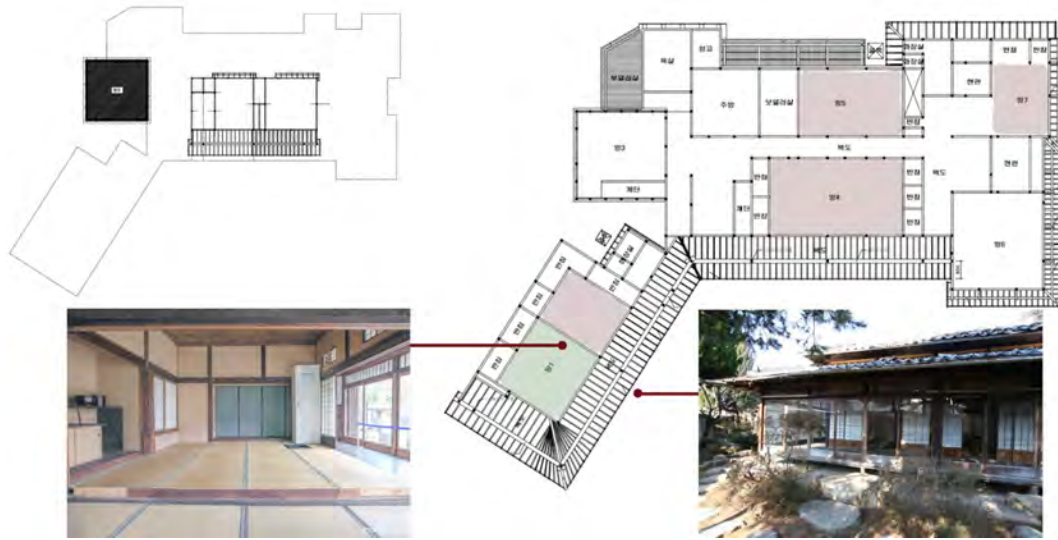
#### **3.3.1. History**

Hirotsu's house, now known as Sinheung-dong Japanese-style house, stands as a fine two-story Japanese house in Gunsan city. In the first half of the 20th century, Sinheung-dong was a town where wealthy Japanese people gathered. This building was built by a man named Hirotsu, and after World War II, Yong-goo Lee, the founder of Korea Flour Mills Co., acquired the house through auction. Keen on preserving its authenticity, Mr. Lee even purchased another Japanese-style house to secure materials for potential repairs. Descendants of Mr. Lee lived there until approximately 1985, after which the house remained unoccupied. In 2005, it was recognized as a registered cultural property and underwent an actual measurement survey by Cheongju University in 2007. Following the roof and other essential repairs, it was briefly accessible to the public. However, since 2015, only its exterior remains visible to the public.

According to the inscription displayed in front of the building, this structure was constructed in 1925 as a house of Keisaburo Hirotsu, who owned a dry goods store. The year of 1925 is derived from the record that land use was approved in 1925 and the interview conducted in 2000 with residents from the time when Hirotsu was there. However, in 2012, sociologist Kazuko Fujii shared different information. She conducted research on Japanese people who were left behind in Gusan after World War II and presented the contents of the interview with Shohei, the grandson of Hirotsu. In the interview, Fujii revealed that the landlord's name was actually "Kichisaburo Hirotsu," and he worked as a rice broker, not a dry goods merchant. Later, Hirotsu transitioned to rice farming, with the office located in a different location. Regarding the house, the account states that Hirotsu purchased the land from a retiring acquaintance who returned to Japan in 1931 and completed the house in 1935. Grandson "Shohei", born the same year the Hirotsu family moved into the new home, provides the accuracy of the given date<sup>38</sup>.

Hirotsu's residence is a relatively large two-story samurai-style house, complete with an attached warehouse. The main tatami room at the western end of the house boasts rare features like Tokonoma and Tsukeshoin, typically found only in high-end Japanese houses. While villas of Kumamoto were new and luxurious, the houses of Hirotsu showed more traditional elegance. Approximately four rooms in the house feature an underfloor heating system. Although some areas underwent renovation by Korean families at a later time, not all rooms were modified. The two long rooms in the center are equipped with Ondol, likely installed by the original Japanese occupants. Interestingly, the long room in the south was once two separate rooms, but it was opened up by a Korean family, removing walls and pillars. On the second floor, there were, two 6-tatami size rooms served as living quarters for Hirotsu's children.

Figure 8. The red color on the floor plan represents the ondol room, and the green color represents the main tatami room. The bottom left photo was shot before the floor of the 6 tatami-size room was lowered<sup>39</sup>.



### 3.3.2. Tatami

Hirotsu's house was a popular filming location for Japanese colonial period dramas and movies during the 1990s, attracting numerous visitors. However, due to concerns about preserving its cultural significance, public access was restricted later on. The house is currently undergoing restoration and repair work on the internal structure. Once the restoration is complete, the house will be reopened to the public, but despite initial progress, the restoration work seems to have stalled midway. On the western side, there is the main tatami room and an adjacent 6 tatami-size room. The Korean residents maintained the main tatami room in its original state but converted this 6-tatami room into an Ondol room. However, due to the installation of Gudle, the floor became higher than the main tatami room or hallway. This difference in floor levels was noticeable during the filming of a drama. Currently, the Ondol section has been removed, restoring the original floor level, and tatami mats are being laid in their place.

Within Hirotsu's houses, tatami mats are still present, unlike other Japanese-style houses. Photographs from the drama production show an orderly arrangement of eight tatami mats in the main room. Currently, due to partial floor collapse, tatami mats are stacked aside awaiting for repairs. These mats measure 1910mm by 955mm, Kyo-ma size with a non-standard thickness of 50mm. However, in the 6-tatami room, the mats do not have correct dimensions and similar to the situation in Hwaho-ri, unusually sized tatami mats were used to fill the remaining space. Upon investigation, it was revealed that the main room's tatami mats were not the original ones used by the Hirotsu family but were replaced by the broadcasting station during filming in the

1990s. Conversely, new tatami mats were ordered for the 6-tatami room because the ones from the broadcasting station did not fit after the floor height was lowered (Figure 8.)

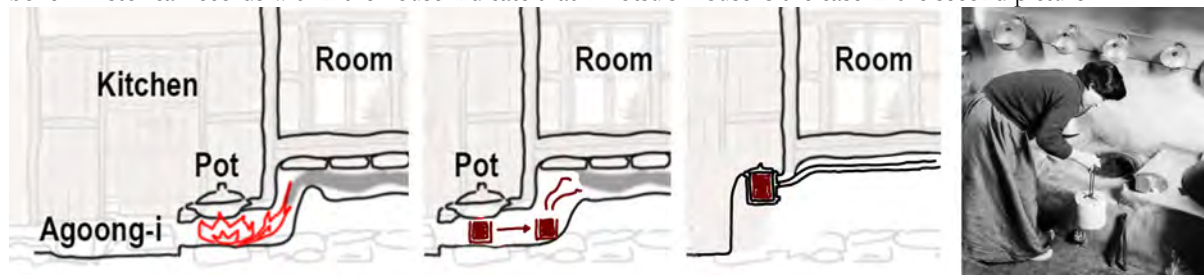
The two tatami rooms on the second floor also have six tatami mats. These rooms display a perfect Kyo-ma characteristic, with seamless alignment of the floor, pillars, shoji screens, and ceiling. Access to the ceiling is granted through a closet on the second floor. The roof was crafted using traditional Japanese wooden construction methods, and Bantsuke<sup>36</sup> was also discovered. Although Munahuda was not identified, the design strongly suggests the work of a skilled Japanese carpenter.

### 3.3.3. Ondol and Briquettes

Hirotsu's house boasts over ten rooms, with a minimum of four designed as Ondol rooms, including the two long rooms in the middle. Remarkably, both of these rooms are exceptionally well-preserved, and a restoration project is underway to prepare the Gudle stones for public display. However, this Ondol system is different from the usual traditional type. Underneath the floor, a small brick tunnel has been constructed, with charcoal briquettes placed inside to generate heat for the floor. Historical records within the house indicate that initially, the two central Ondol rooms used wooden charcoal, and the southern room changed to charcoal briquettes. It is also stated that this alteration was later implemented by Koreans after the 1960s.

This conclusion is supported by the presence of tatami mats in both rooms and the use of charcoal briquettes for floor heating which was introduced in Korea during the late 1950s. Prior to this period, Koreans had utilized wood for their Ondol systems, leading to a fuel shortage in the 1950s. Consequently, the government recommended the use of charcoal briquettes. Koreans continued to use the existing Ondol structure by putting charcoal briquettes in Agoong-i. However, incidents arose where carbon monoxide emitted from the briquettes accumulated in rooms, tragically causing deaths. In response, a safe hot water boiler was invented in 1962, gaining popularity. This innovative system used charcoal briquettes to boil water, passing it through metal pipes beneath the floor to safely provide heating (Figure 9.)

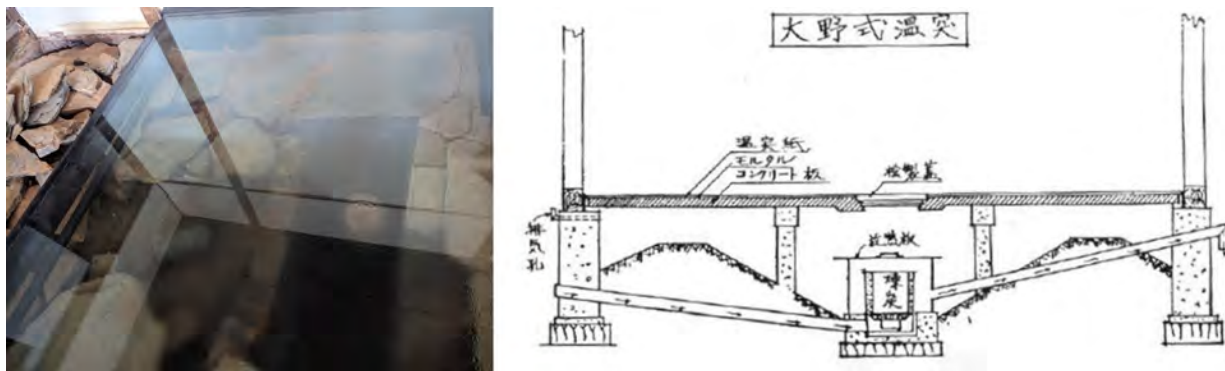
Figure 9. From the left, traditional Ondol, using briquettes in Ondol, briquette boiler. The photo shows a briquette boiler. Historical records within the house indicate that Hirotsu's House is the case in the second picture.



However, the use of briquettes in Korea predates the 1950s. In the 1910s, round-shaped charcoal briquettes with holes and small balls of rolled charcoal were introduced in Kyushu, Japan. Initially used for industrial purposes in Japan, these briquettes gained household popularity as their quality improved and smokeless types were invented. By the 1920s, they accounted for about one-third of the consumption of wooden charcoal in households. Osaka, in particular, had an estimated annual usage of around 80,000 tons by the 1920s<sup>40, 41</sup>.

In Korea, charcoal was mined in Pyongyang and Duksan, with Pyongyang's charcoal being notably high-quality and widely utilized for heating and cooking in Ondol. Even if charcoal had not reached Koreans yet in the 1920s, it had already become prevalent among Japanese residents living in Korea. The charcoal briquette Ondol systems introduced in Korea during the 1950s differed from those discovered in Hirotsu's house. In Hirotsu's design, a tunnel was constructed to position the heat source directly beneath the floor. In contrast, the Korean charcoal briquette Ondol systems utilized Agoong-i, placing the charcoal slightly deeper into the fire. However, this method proved inefficient for cooking purposes and as a solution, briquettes were stored in specific containers, and stoves were installed at the same height as modern kitchens. This practice predated the invention of hot water boilers. In other words, it would be impractical for Mr. Lee, the president of a major company, to dismantle the entire floor and remodel it back to the most primitive Ondol type.

Figure 10. Left is the briquette tunnel found under the floor of Hirotsu's house. It is similar to Ono-style Ondol tunnel<sup>42</sup> (right) rather than Korean briquette Ondol in figure 9.



As described in Chapter One, upon their initial arrival in Korea, the Japanese tended to stick to their own cultural practices. However, as time passed, they gradually embraced the local culture. Japanese carpenters, in particular, made continuous advancements in Ondol heating systems, studying various styles such as the Kawakami, Muraoka, and Ono styles<sup>42</sup>. Among these styles, Hirotsu's Ondol system bears a striking resemblance to the Ono style, featuring a tunnel beneath the floor and charcoal briquettes. The distinction lies in the materials used; the Ono style employed concrete and mortar, while Hirotsu's houses were built in

the Korean style Gudle, with tatami mats placed on them. Notably, in Japan, there were Irori<sup>43</sup> or Hori Kotatsu<sup>44</sup>, which is dug in the middle of tatami rooms and heated using charcoal or briquettes. In the 1920s, special a pottery was sold as a "Kotatsu that also held charcoal briquettes", indicating that placing charcoal briquettes under a tatami room was not an uncommon practice.

Initially, Japanese individuals unfamiliar with Ondol experienced dizziness and headaches, potentially due to carbon monoxide poisoning from the charcoal briquettes. Unlike Korean rooms made of earthenware, Japanese rooms were well-ventilated, which might explain the lack of fatalities in these instances.

#### **3.3.4. Change of shutter**

In Japan, where typhoons are common, shutters (Amado) have been installed outside windows as a preventive measure against disasters. This practice seems to have emerged around 1600. These shutters were not only employed for disaster prevention but also for warmth and security purposes, preventing theft. Similar shutters were also integrated into Japanese-style houses constructed in Korea. However, Korea does not experience the same level of strong typhoons as Japan does and by the 1910s, the use of glass with improved insulation became prevalent, making shutters hardly needed in Korea.

In Kumamoto's farmhouses, only small windows for shutters have remained, and the door pockets for storing these shutters had been removed. In the case of the Kumamoto villa, shutters were not part of the original design. Hirotsu's house had designated pockets in all openings on both first and second floor. However, the wooden shutters meant for these spaces were absent. The door on the second-floor door was empty, while on the first floor, iron grates were fitted inside the door compartments. It appears the shutters were primarily used for security, as indicated by the replacement of wooden shutters with iron lattices to allow more sunlight into the rooms.

### **4. CONCLUSION**

#### **4.1. The Era of Drastic Changes**

Following the opening of the Busan port in Korea, the Japanese government actively encouraged its citizens to establish permanent residences in Korea. To facilitate this, they provided institutional and economic support, making travel between Japan and Korea more convenient. Despite these efforts, a significant number of Japanese individuals viewed Korea primarily as a business destination and planned to return to Japan after their retirement. The prevailing social atmosphere, marked by concerns about safety and security, played a pivotal role in shaping this desire to return to Japan.

Japanese individuals living in Korea showed a sense of cultural superiority, preferring to live in a manner close to life in Japan. This inclination toward Japanese customs was facilitated by the unique geographical proximity between Korea and Japan. Unlike other colonies of the same era, Korea and Japan shared an exceptionally close geographical relationship. This closeness allowed residents in Korea to easily import a wide range of items, from building materials to daily necessities, directly from Japan, making it both time-efficient and economical to maintain their Japanese lifestyle.

Moreover, the close geographical proximity made it easier for technology and artisans to arrive in Korea. Artisans could conveniently travel to Korea for business purposes or through branch offices, fostering a cultural blend of Western and Eastern Japanese influences during this period. In the colonies, any cultural fusion was readily accepted as "Japanese," regardless of its regional origin. However, as the Japanese settlement in Korea advanced, it became evident that adjustments had to be made. Japanese residents had to adapt to Korea's specific climate, trade dynamics, and employment relationships as they integrated further into the Korean society.

This scenario created an environment where innovation and acceptance of new technological and cultural developments occurred. Architecture was also greatly influenced by this environment. This article confirms this influence in two key aspects. Firstly, it delves into changes shaped by the social atmosphere of the time. There were instances where structures, though intended as residences, had other priorities overshadowing comfortable living. Japanese architectural designs emphasized "security," which led to many changes in the plan of building and residents' lifestyles. Secondly, it explores adaptations prompted by different environmental factors. The incorporation of Ondol within Japanese architecture, combined with unique usage practices, led to enhancements in Ondol, serving as a compromise between Japanese and Korean styles.

Unfortunately, these changes did not follow a consistent pattern but instead manifested as individual styles. Had this movement persisted over an extended period, it could have given rise to a distinctive architectural style representative of that era. However, in the case of Korea, the colonial period was relatively brief compared to other nations, spanning only 36 years. Therefore, without sufficient improvement and verification, only fragmented traces of these efforts remained until today.

#### **4.2. Problems Faced by Cultural Properties**

The biggest issue lies in that cultural properties are displayed and explained without sufficient preparation. Research on Japanese-style architecture was not active but it was being carried out more gradually. The contents of the research were often not reflected in the explanations provided for cultural properties. In

particular, the research conducted in Japan appeared to be overlooked and not covered. When restoring buildings, there was a lack of standardization regarding the desired state for restoration. Consequently, rooms were often restored to different periods, creating inconsistencies, like having one room represent 1970 while another reflected 1920. This discrepancy arose partly due to the prioritization of achieving "completion" in restoration efforts, sometimes lacking the involvement of experts in this field. Many conclusions were drawn without considering Japanese culture, perspectives, or historical context. In the future, it is hoped that more Japanese researchers will take an interest in their country's heritage in Korea and engage in research on modern architecture from diverse angles.

## NOTES AND REFERENCES

- (1) “Teki Kanryoukoku Tokou Toriatsukai Kata ni Kansuru Kunrei Narabi Ukei Zakken” [“Instructions and Miscellaneous Matters Regarding Travel to Korea and Japan”], Ministry of Foreign Affairs Records (1889).
- (2) Kenji Kimura, “Zaichou Nihonjin no Shakai-shi” [“Social History of Japanese Residents in Korea”], Miraisha (1989)
- (3) Shinobu Oe *et al.* “Iwanami Kouza Kindai Nihon to Shokuminchi 5” [“Iwanami Lecture Series on Modern Japan and the Colonies Volume 5”] Iwanami Shoten (1993)
- (4) Kim Yong-Wook, “Hangug Gaehangsa” [“Korean Treaty Ports”], Seomundang (1976)
- (5) “Chousen Soutoku-fu Tōkei Nenpou” [“Annual Report of the Korean Governor-General's Office”], p.p.57, 82-87 (1910)
- (6) “Keijō Hattatsushi” [“History of Kyongsong's Development”], Kyongsong Resident League Office p.p.435 (1912)
- (7) “Mankan no Jitsugyou 58gou” [“Business in Manchuria and Korea No. 58”] (1910)
- (8) “Chousen no Jitsugyou 28gou” [“Korean Industry No. 28”] (1907)
- (9) “Chousen oyobi Manshū 70gou” [“Korea and Manchuria No. 70”] Korea and Manchuria Company
- (10) “Chousen oyobi Manshū 49gou,75gou” [“Korea and Manchuria No. 49 and No. 75”] Korea and Manchuria Company
- (11) Kazuo Kawai, “Chousen ni okeru Sanmai Zouhoku Keikaku” [“Rice Production Expansion Plan in Korea”] Miraisha (1986)
- (12) Benjirou Nakamura, “Nihon Beikabendoushi” [“Rice Production Expansion Plan in Korea”] (1933)
- (13) Yujirou Oka, “Nihon Beikoku no Shourai” [“The Future of Japanese Rice and Grains”] Kokkosha (1897)
- (14) “Kobe-kou 150-nen no Kiroku: Bōeki Tōkei Kara Miru Bōeki no Hensen” [“Kobe Port's 150 Years of Records: Evolution of Trade Through Trade Statistics”] Kobe Customs p. 2-8
- (15) Minoru Oomameuda, “Okome to Shoku no Kindaishi” [“Modern History of Rice and Food”] Yoshikawa koubunkan (2007)



- (16) Shigemitsu Kimura, “Nihon Nougyou Shi” [“History of Japanese Agriculture”] Yoshikawa koubunkan (2010)
- (17) Hiroyuki Kawashima, “Nihon Nougyou Shi” [“History of Food and the Japanese”] Toyo Keizai INC (2010)
- (18) Yomihei Shinohara *et al.* “Chouki Keizai Toukei 6” [“Long-Term Economic Statistics Volume 6”] Toyo Keizai INC (1967), Mataji Umemura *et al.* “Chouki Keizai Toukei 2” [“Long-Term Economic Statistics Volume 2”] Toyo Keizai INC (1988)
- (19) Minoru Oomameuda, “Kome Soudo Zengo no Sotamai Yunyuu to Sandai” [“The Import of Rice from Burma, French Indo-China and Thai into Japan before and after The Rice Riot”] Bulletin of Toyo University, Department of History, the Faculty of Literature p.123-193 (2017)
- (20) “Nougyou Kyosai Shinbun” [“Agricultural Mutual Aid Newspaper”] National Agricultural Insurance Association (1999)
- (21) Shin Aran *et al.* “Kankoku • Taiwan ni okeru Nisshiki Mokuzo Jutaku no Genjo to Kankoku • Andong-shi no Tetsudo Kansha Jissoku Chosa” [“Current Status of Japanese-style Wooden Houses in Korea and Taiwan, and Actual Survey of Railroad Officials' Residences in Andong City, Korea”] Graduation Thesis, Chubu University (2011)
- (22) Sungsoo Jang *et al.* “20segi hwaholiui gyeong-gwangwa gieog” [“Scenery and memories of Hwahori in the 20th century”] Noonbit Publishing (2008)
- (23) Kozo Ike, “Sumai to Takumi” [“Dwellings and Craftsmen”] Sagami Shobo (1986)
- (24) Kazuhiko Naito, “Watashi no Nisshiki Kenchiku Kenkyu - Sono Hottan to Keii” [“My research of Japanese-Style Architecture - Its Beginning and Development”] Chubu University Institute for Global Human Resource Development p. 110-122 (2006)
- (25) Data from the Korean Meteorological Administration and the Japan Meteorological Agency.
- (26) “Chousen no Jitsugyou 1gou” [“Korean Industry No. 1”] (1905)
- (27) “Chousen oyobi manshu 66gou” [“Chosun and Manchuria No. 66”] Korea and Manchuria Company.
- (28) “Chousen oyobi manshu 50gou” [“Chosun and Manchuria No. 50”] Korea and Manchuria Company.
- (29) “Chousen no Jitsugyou 5gou” [“Korean Industry No. 5”] (1905)
- (30) The Photo and the map were edited by quoting from reference books; “Ilje gangjeomgi nongchon sutal-ui gieog hwaholi 1” [“Memories of rural exploitation during Japanese colonial rule - Hwahori 1”] National Wanju Cultural Heritage Research Institute (2020)
- (31) Dong-su Han, “gumamoto nongjang-gwa geonchug” [“Kumamoto Farm and Architecture”] Hana Design (2021)
- (32) Myeong-sun O *et al.* “Kankoku ni genson suru shokuminchi jinushi no "yakata" no jissoku chousa - Kumamoto Rihei-tei (Kankoku, Gunsan)” [“Actual Survey of Colonial Landowners' "Mansion" in Korea - Kumamoto Rihei's Residence (Gunsan, Korea)”] Graduation Thesis, Chubu University (2004)
- (33) “Yukimi Shoji” is a type of sliding paper window in traditional Japanese architecture. It has opening or glass panels installed in the lower half of the door, allowing occupants to enjoy the external landscape even when the door is closed.
- (34) “Ajiro ceiling” is a ceiling design made by weaving thinly processed plant materials such as wood, grass, or bamboo into a flat plane, which is then used as the ceiling material.
- (35) Yeongchun Lee, “naui gyoulog” [“My Memoirs”] Nine Publishing

- (36) "Banzuke" is a system of marking individual components in order to clearly define their positional relationships within a structure.
- (37) Miyazu City History Compilation Committee "Miyazu Shi-shi" ["Miyazu City History"] Miyazu City (2002)
- (38) Kazuko Fujii "Shokuminchi Toshi Gungsan no Shakai-shi (1) -Shinkodong Nihonshiki kaoku (Kyu Hirotsu kaoku-)" to Hirotsu-ke no Rekishi" ["Colonial City of Gungsan's Social History (1) -Shinko-dong Japanese-style Houses (Former Hirotsu Residence)" and the History of the Hirotsu Family-"] Kansai Gakuin University Faculty of Social Studies Bulletin (2012)
- (39) Former Hirotsu House in Sinheung-dong, Gungsan - Documentation investigation report, Korean Cultural Heritage Administration
- (40) Kennosuke Tsujimoto, "Kaitei-yo kokei nenryo to rentan kogyo" ["Solid Fuel and Charcoal Industry"] Fuel Association Journal, 4 (39) Fuel Association Branch Office, p.1135-1149 (1925)
- (41) Riichi Fujiwara, "Katei-yo mame-tan rentan ni tsuite" ["Household Bean Charcoal and Charcoal Production"] Fuel Association Journal, 22 (1) Fuel Association Branch Office, p.100-106 (1943)
- (42) "Chosen to Kenchiku 19(3)" ["Korean Architecture19(3)"] Korean Architectural Society (1940)
- (43) "Irori," is a square cutout in the floor of a traditional Japanese house designed for the purpose of laying ashes, kindling, and charcoal to ignite a fire for heating and cooking.
- (44) A hori-kotatsu is a Japanese-style heating system in architecture where a pit is dug into the floor to accommodate a hearth, and a platform is placed over it, forming a heated table.

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**PRIVACY AND POCHE AT MONTICELLO**

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## PRIVACY AND POCHE AT MONTICELLO



*Monticello, Thomas Jefferson's famous house, has become an icon in American culture, so much so that it appears on the back of our five-cent coin. The image of this house is as ubiquitous as are the many praises of its wonders, inventiveness, and the genius of its designer, the 18th-century polymath, Thomas Jefferson.*

*As a result of its iconic status, Monticello has rarely been examined with a critical eye, and its actual composition has rarely, if ever, been assessed. This paper will examine Monticello from a compositional viewpoint, particularly in light of the French Hotels (private urban houses) that were being designed contemporaneously in Paris. Jefferson was aware of the innovations in plan and section that were being tried in Paris and brought those innovations to the design of Monticello.*

*French society at the time began making explicit distinctions between public ritual, domestic ritual, and private affairs in their Paris homes. This was accomplished by designing rooms as clearly defined, figural spaces. The resultant liminal zone between these rooms is referred to as *poché* in English (meaning pocketed in French) and became the location for very private rooms called *boudoirs*.*

*This paper will trace the development of changing concepts of privacy and modesty in France and in the American colonies in order to show how Jefferson further elaborated and refined these ideas at Monticello.*

*In particular, this paper will diagram and explain the complex system of *poché* that Jefferson developed to organize his home. The use of *poché* will be examined in plan and in section. The sectional discussion of *poché* will be of particular use in resolving "the problem of the dome," its provenance, use, and ultimate configuration at Monticello.*

*The paper will conclude with some observations on the possibilities of using *poché* as a compositional device in our day and time.*

### 1. THOMAS JEFFERSON

Thomas Jefferson, the second American President was an autodidact with a natural curiosity about literature, botany, government, and architecture. Responsible for developing the initial concept for the Capitol building in Richmond, Jefferson also designed the Rotunda at the University of Virginia and the plan for the original campus there. He is most well-known for the design of Monticello, his primary residence and a work in progress for most of his life. Less well known is the design for his home at Poplar Forest outside of Lynchburg, Virginia. Jefferson was the quintessential life-long learner. The growth and depth of his learning is reflected in the maturing designs of his buildings<sup>1</sup>.

As a public man, Jefferson had an immense and ongoing influence on the development of the United States. Volumes have been written about this extraordinary man, however; this paper concentrates on his private homes and the so-called "French" influence in his designs of both Monticello and Poplar Forest.

## 2. MONTICELLO

In 1767 Jefferson began planning Monticello. Palladio's *Four Books of Architecture*, found in his personal library, influenced its design. The front elevation, which Jefferson later revised, is clearly derived from Palladio's Villa Cornaro<sup>2</sup> (Fig 1.) with a two-storey, half-octagonal bay within a portico of columns. Continuing his nod to Palladio, Jefferson also designed a symmetrical 'U' shape of dependencies and outbuildings forming a kind of forecourt in front of the facade in the manner of Palladio's most famous Villas<sup>3</sup> (Fig 2). These dependencies were not finished until after 1800.

It is generally surmised that Jefferson's intent was to provide a classical image for his home - one that referred back to the wonders of Greek and Roman architecture. In this way he was linking the fledgling American republic to the ideas of the Roman republic and those of Greek democracy<sup>4</sup>.

## 3. FRANCE AND AMERICA

Jefferson's sojourn in Paris as ambassador to France from 1784-1789 changed him profoundly.<sup>5</sup> This was just before the French Revolution - a time known for excess in social fashions and customs of all sorts. Jefferson was not only engaged with diplomats at the highest levels of society, he also visited the homes of influential people - buildings designed for their political impact. Jefferson even redesigned the house he rented while living in Paris. He returned to his native Virginia with memories of French cuisine as well as ideas he wanted to try out in house design – particularly at Monticello. However, bringing sophisticated design ideas to the new nation of America was fraught with problems.

At the end of the 18<sup>th</sup> century Europe had artisans, master carpenters, painters, stone masons, bricklayers, tile factories, and cabinetry and finish carpenters to build the fabulous homes of the wealthy and impressive government buildings of the time. America was still only beginning. We had no building industry other than the know-how from trial and error in a wilderness devoid of tools and lengthy apprenticeships for the would-be builders. There were no building supplies for sale. Most labor was done entirely by hand with what the settlers found on their land and with tools they made by hand.

For the wealthier ruling class, pattern books<sup>6</sup>, with plans, elevations, and details, were eventually used by carpenters and builders to make more refined buildings, like the Palladian manors then in vogue across the Atlantic. Many buildings were constructed using white and black slave labor who learned by doing. Even nails had to be made at home. It is a testimony to American ingenuity that anything of value constructed under these conditions has come down to the present. Jefferson's homes were no exception to these conditions.

The average American lived in simple wooden or brick structures. In the Tidewater area of Maryland and Virginia these were usually very basic in form - often consisting of only two rooms. All the functions of the household were held within these two rooms. Over time the idea of privacy began to develop. As the population grew in wealth the two rooms became two storeys or four rooms with two rooms upstairs<sup>7</sup>. One of the two lower rooms was the all-purpose living and socializing room where the lady of the house also managed household affairs. The other room was the dining room. Porches were introduced as an intermediary between visitors and the family. Later a hallway between the two downstairs rooms became a further buffer. Visitors could be invited into the hallway where they could wait before being ushered into the parlour. The kitchen would be either in the basement or in an outside dependency. The idea of personal privacy was a luxury for the wealthy. Early American homes, even those of our presidents, had few private spaces unlike the grand homes in Europe at that time. Jefferson broke new ground in his two personal houses by clearly articulating private spaces using design innovations borrowed from Europe.

#### **4. MONTICELLO REMODELED**

When Jefferson returned from France, he immediately began remodeling the façade of Monticello. It is generally thought that Jefferson wanted to create a classical style that was truly American, but without the grandeur and implied social hierarchy of the European aristocracy. He wanted something more modest and at the same time larger than his first house. The foundation and front rooms of the original design of Monticello were retained as well as the position of the partially built dependencies.

The home kept its original symmetry intact in the remodel. Like the French hotel style, it has a formal side and an informal side. However, at some point during the long history of this home the formal and informal sides were misunderstood and flipped. Jefferson's intended grand entrance was under his octagonal dome. He conceived the southwest elevation as the entry to Monticello. This is supported by an early landscape design by Jefferson, showing a roundabout that drops visitors off at that point (Fig. 3). The back of Monticello was enclosed by an arc of bushes or trees making a quiet retreat for this side of the house rather than a grand entry.

On the southwest, the house and garden are framed by the 'U' of dependencies.<sup>7</sup> Visitors approach from the garden through the portico under the dramatic dome. This entrance is beautifully lit for most of the day. This memorable image is the one most often photographed. It is the image on our American nickel (Fig. 4).

A second set of foundations was added to the back of Monticello doubling the square footage of the footprint of the original house. The 'U' of the dependencies was built during this time reinforcing the likeness to a Palladian country house not a Parisian hotel particulier with its closed H configuration. Always the

innovator, Jefferson tucked the dependencies into the hill. He created an original and complex system of hidden 'rooflets'<sup>8</sup> (Fig. 5) with flat walkways over the dependencies forming a promenade from which to appreciate the views to the southwest.

These largely inconspicuous and underground dependencies gently framed the front lawn.

This lawn was bordered by an organically weaving walkway carefully planted with varieties of local flora. Jefferson created a more casual landscaped American look rather than a rigorously geometric Italian renaissance garden. The lovely view to the west was of Jefferson's beloved Virginia wilderness.

From any angle the house appears to be quite modest. It seems to be only one storey, but in reality it is a three-storey house with basement storage and servant work areas. Jefferson wanted to accomplish two things. He wanted to build a house suitable for an ex-president who felt it his duty to receive, shelter, and entertain those who came calling. He also wanted to build a model home for the yeoman farmer or everyman citizen in whom he so fervently believed. The result was a modest, cultivated house informed by the civilities of classical architecture.

The visitor would walk into the entry parlour. Although the parlour was directly under the dome it had a flat ceiling. Therefore, there was no experience of the dome from inside the parlour. The parlour was central with the dining room and tearoom on the left and Jefferson's private sitting room, library and bedroom on the right. All the public spaces are arranged enfilade along this public side of the house.

Proceeding through the entry parlour straight ahead the visitor arrives in the more private half of the house which leads straight into the ballroom with its mezzanine level for musicians. This was a multipurpose room also used as a classroom and music room where the many children at Monticello were taught. Corridors on either side lead into private bedrooms and hidden stairs to the upper-level bedrooms. A portico off the rear of the ballroom allows the visitor to walk out of the house and, currently, into an irregular grove of trees facing east. All of this makes perfect sense. The house is divided into its public realm in front and private realm in back (Fig. 6).

While in France, Jefferson deeply admired the Hotel de Salm<sup>13</sup> built by the Germanic ambassador, the Prince of Salm-Kyrburg. He writes in his diaries that he went to observe its construction almost every day. The Hotel de Salm had the traditional grand forecourt and an axial sequence of rooms that culminated in a grand salon – a circular room topped by a decorated dome. Interestingly, there was no garden court. Instead, the grand salon was expressed on the outside as a dramatic image seen from what is currently the Quai Valéry-

Giscard-d'Estaing along the Seine River (Fig. 8). The dome was conceived as the dramatic public image for the Hotel de Salm.

Jefferson's clear intent was to create a dramatic image for Monticello. He adopted the image of the dome as the primary image of Monticello. This dome room, accessed from the third floor, was used variously as a storeroom, playroom for children, a kind of barracks for visitors and even as a bedroom for one of Jefferson's relatives. The image of the dome from the *outside* is significant, but on the inside it was not visible. It was directly over the parlour making the dome room a second-floor space. The parlour, therefore; had a flat ceiling. The front half of Monticello has only two storeys, while the back side has three. They come together with the hall corridor along the length of the building. This is an entirely unique and unexpected Jeffersonian sectional solution.

In Palladio's villas, the dome is seen from the outside and is always experienced on the ground floor, but at Monticello, the dome is not experienced from the inside but is hidden. In this way Jefferson re-interpreted the dome as symbolic and yet mysterious. Most likely, Jefferson fell in love with the dome at the Hotel de Salm and wanted to do something like that at Monticello. Unfortunately, he must have discovered that the structural integrity of the original walls could not support a two-storey open dome over the parlour entry. Thus, he needed a floor under his dome for structural integrity.

Another addition to Monticello's remodel were the side porches with their louvered openings. While Ambassador to France Jefferson traveled to Italy. He would have seen the elaborate use of louvered window shutters ventilating Italian homes. It is likely that his idea for louvered window openings on his two side porches came from there. Jefferson's innovation was to use louvered shutters, not to shutter the windows in his rooms, but to enclose the side porches, allowing them to double as sleeping areas during the Virginian summers.

## **5. EXAMPLES OF FRENCH POCKETED SPACES AND OTHER INFLUENCES**

The dome was not the only element Jefferson brought back from Europe to use at Monticello. Paris was home to a unique residential mansion style called the hotel particulier built in the 17<sup>th</sup> and 18<sup>th</sup> centuries. It was the French nobleman's city home when away from his country estate. The early hotels had an H shape featuring a courtyard off of the street where carriages would arrive and horses would be stabled. The other open part of the H would be a courtyard garden and open onto another street. The lines of the H were a series of inter-connecting rooms with no hall spaces. The rooms could be used for salons, dining rooms, or bedrooms as needed.



Later 18<sup>th</sup>-century French construction began to differentiate rooms based on their use. Bedrooms became distinguished from public receiving rooms or salons<sup>14</sup>.

The development of pocketed (poché) spaces hidden in the interstices between rooms was done throughout history in noble dwellings. By the 18<sup>th</sup> century these hidden spaces were highly developed, particularly in France. This allowed two circulation patterns in the hotel, one route for the nobles and a second, hidden route for those serving. During festivities crowds of revelers flowed easily from room to room, while servants passed unseen by means of the hidden spaces and passages. Access to these hidden spaces was usually by doors concealed behind paneled walls. Also hidden in these spaces were bathing and dressing rooms, valet beds, etc. Jefferson surely saw and appreciated this aspect, because he eventually employed this strategy in a greatly simplified manner at Monticello.

Another French innovation was the dumbwaiter which Jefferson hid in the cabinetry of the fireplace to bring wine bottles or food up and into the dining room. There is also a hidden rotating serving door that separates the dining room servants from the kitchen servants. The cabinet rotated so that items could be unobtrusively retrieved by the dining room servants directly.<sup>15</sup>

In the south passage, there is a closeted toilet like in the French homes of the time where human waste dropped through pipes into barrels located in the basement. These would be emptied frequently. There is a similar toilet in a poché space accessible from Jefferson's bedroom and his study. The closeted toilet feature is repeated directly above in the two upper bedroom floors as well using the same conduits.

One of the peculiarities of Monticello is that the stairs to the two upper floors are hidden within the walls and quite steep and narrow. They imitate the French pocketed, narrow servants' stairs while visitors used grand, elaborate stairs clearly designed for public display. Unlike in Paris hotels, there is no grand stair at Monticello. At Monticello the hidden, poché stairs are the only stairs. Jefferson's famous concern for utility seems to have driven this approach. It can be surmised that these cramped stairs were preferred as being more modest.

## **6. OTHER INNOVATIONS OF NOTE**

The alcove beds Jefferson used at both Monticello and Poplar Forest were probably derived from northern European influence where winters tend to be very cold. Built by a Germanic ambassador, the Prince of Salm-Kyburg, the Hotel de Salm in Paris probably imitated the beds at Sans Souci in Potsdam. Jefferson may have gotten his idea for alcove beds from that grand home. Jefferson's bed is located in an alcove accessible from

both the bedroom and his study (Fig. 9). To the side of Jefferson's bed is a poché stair leading to a hidden clothes closet above his bed.

Alcoved areas would have been hot places in which to sleep in a hot, humid Virginia summer or a similar Parisian summer. Jefferson's guests often complained about this in written reminiscences of Monticello<sup>16</sup>.

The famous Jefferson clock is located in the ballroom. Personal clocks were an 18th century addition to civilization. Every modern man needed one especially if he had a scientific bend to his way of thinking. Jefferson would have seen the first clocks in Paris and would have wanted his own. The inner workings of his clock are the kind of engineering detail that Jefferson loved to discover and design. This preoccupation with time as a regulator of one's life was a new and somewhat unwelcome feature of the 18<sup>th</sup> century but would have been useful in regulating the length of classes or studies conducted in that room.

Jefferson may have been the first American to use triple-hung windows from ceiling to floor.<sup>17</sup> The lower two sashes, when raised, allowed for people to walk through, while lowering the upper sash allowed warmer summer air to vacate and thus create an airflow in the hot Virginia summer. He used these in both Monticello and Poplar Forest.

Skylights were a feature that became quite popular in late 18th century France and would be opened to create an airflow in the heat of summer. Jefferson put one in his bedroom at Monticello and in the dining room as well. They would have helped to ventilate hot summer air.

We cannot leave the discussion of French influences on Jefferson without mentioning Jefferson's appreciation for French cuisine. His chef was trained in France and was not allowed to leave Jefferson's employ without training a successor before going. Jefferson's chefs even learned to make cheese. Everyone would agree that that was likely an improvement to the daily English oriented fare of America's early days.

## **7. POPLAR FOREST**

In the rural America of Jefferson's day there were few inhabitants, few travelers and a need for company and conversation. The only inns would have been taverns in towns. Sharing a bed with a fellow wayfarer was normal. In rural areas visitors stayed with the inhabitants - often for days. A person of Jefferson's stature had uninvited guests and invited guests on a near daily basis - sometimes upwards of 50 people a night. It is understandable that Jefferson would want a more private home away from Monticello when he needed some down time.

After working on Monticello for nearly 40 years, Jefferson began working on the plan for his retreat home, Poplar Forest.<sup>12</sup> Poplar Forest was Jefferson's final home design and is less quirky (Fig. 10) than Monticello. Much smaller than Monticello, it was a get-away home at two days travel from Monticello. Octagonal in shape, there are hexagonal rooms on each side and a central square dining room lit by a skylight<sup>18</sup>. This skylight was easier to construct than a dome would have been, and yet was still an impressive feature at the center of the house.

The parlour or public side of Poplar Forest has an entry porch, but no steps leading to the garden. The bedroom, private side of the house has a porch with steps leading to the entry lane. The parlour placement is similar to the grand entrance at Monticello (Fig. 7), minus the steps to the garden level. It can be argued that since Jefferson never finished Poplar Forest he may have intended a more formal entry from the garden with steps leading directly into the parlour on the public side of the house.

The existing plans for both Monticello and Poplar Forest show only elevations and floorplans. Other details Jefferson may have intended, but left unfinished, died with him. Remember that he was not a trained architect, but a bright dreamer and did not do complete construction documents as such.

As at Monticello, at Poplar Forest Jefferson again put his beds in alcoves. The stairs to the servants' area beneath are hidden and hide the French toilets under them as well. There are two additional toilets outside in the octagonal brick structures which are symmetrically placed on either side of the home. These toilets could be emptied as needed. Poplar Forest also features the triple hung windows allowing for summer airflow when the upper section was open.

The basement under Poplar Forest was a support area for servants and a storage area. Built into a slight hill, it had full scale windows on the side under the parlour room.

As in the early Parisian hotels, the private rooms at Poplar Forest were interconnected providing an uninterrupted, circular, enfilade flow. The grand linear entrances on both sides led directly to the dining room. However, the later 18<sup>th</sup> hotels had more defined spaces. Poplar Forest's rooms had defined uses: bedrooms, sitting areas, dining room, and foyer combining the historical development of the Hotel concepts as seen in Paris: enfilade, but with defined room uses.

The play between the front and back facades with their public and private parts made Jefferson's homes innovating and futuristic. In contrast, the average, untraveled 18<sup>th</sup> century American was still living in a one room cabin on his partially cleared farm.

## 8. MODERN POCKETED INFLUENCES

A lot has transpired in American residential building styles in the past 250 years since Jefferson went to Paris. Although most American homes did not have poché elements until water closets and walk-in closets came into vogue in the late 19<sup>th</sup> century, the direct European influence is evident. Every elegant mansion had a grand public staircase and a poché back stair hidden in the private part of the house. Front porches and sleeping porches also made their way into hot urban areas. Eventually, we added bathrooms and powder rooms, linen and coat closets, mudrooms and hidden laundry closets as well as built in cabinetry of all sorts as common poché elements. We may lately have taken the idea to an extreme with bedroom kitchenettes and office nooks common in today's McMansions.

## 9. CONCLUSION

When Jefferson lived in Paris, he was influenced by all sorts of European design innovations, not just those French. He adopted the idea of poché but used it differently in his homes than the French did. Triple hung windows were invented by the English. Alcove beds were a northern European idea. The Italian influence of Palladio was everywhere by 18<sup>th</sup> century America. As a forward-thinking American of and before his time, Jefferson's most amazing quality was his insatiable curiosity about the world and his ability to reflect what he learned with innovations all his own.

While it can be said that Jefferson was greatly influenced by French design, we would argue that he was more deeply influenced by the classical tradition of thought and architecture. He said of his design for the Virginia Capitol, its "object is to improve the taste of my countrymen, to increase their reputation, to reconcile them to the respect of the world, and procure them its praise."<sup>19</sup> The same could be said of his designs for Monticello and Poplar Forest. These were not just houses, but expressions of the good, the true and the beautiful with Jefferson's American innovations. This combination of aesthetics and probity were Jefferson's legacy to us and posterity.

## NOTES AND REFERENCES

W. Beiswanger. *Monticello in Measured Drawings*. 1998. The Thomas Jefferson Memorial Foundation, Charlottesville, VA.

Carson and Lounsbury. *The Chesapeake House*. 2013. The University of North Carolina Press, Chapel Hill.

M. Dennis. *Court and Garden – From the French Hotel to the City of Modern Architecture*. 1986. MIT Press, Cambridge, MA.

- J. Ellis. *American Sphinx – The Character of Thomas Jefferson*. 1996. Vintage Books, NY
- A. Greenberg. *The Architecture of Democracy*. 2006. Rizzoli International, NY.
- J. Horn. *Thomas Jefferson's Poplar Forest – A Private Place*. 2010. The Corporation for Thomas Jefferson's Poplar Forest, Forest, VA.
- T. MacDonald. *Poplar Forest – Thomas Jefferson's Villa Retreat*. 2023. University of Virginia Press, Charlottesville, VA.
- Charles and Peter Miller. 2016. *Monticello – The Official Guide to Thomas Jefferson's World*. National Geographic. Washington, DC.
- R. Morris. *Select Architecture – Being Regular Designs of Plans and Elevations*. 1735. Robert Sayer. London. Digitized 2010. By The Internet Archive.
- F. Nichols. *Thomas Jefferson – Annotated Drawings*. 1978. The University Press of Virginia, Charlottesville, VA.
- A. Palladio. *The Four Books of Architecture*. 1965. Dover Publications, NY.
- C. Westfall. *Jefferson as a Model for American Classical Architecture*. 2015. Newington-Cropsey Cultural Studies Center, <http://www.nccsc.net/essays/jefferson-model-american-classical-architecture>.
- P. Wiltach. *Jefferson and Monticello*. 1925. Doubleday, Page and Company, NY.

## NOTES

1. See Ellis for more about Jefferson's character.
2. See Charles & Peter Miller, page 19.
3. See Palladio, Plate XXXX, for example.
4. See Greenberg, particularly Chapter 1 - *The American House*
5. See Ellis, Chapter 2
6. See R. Morris, entire book.
7. See Carson and Lounsbury, particularly pages 120-139
8. See Macdonald, pages 124-128
9. See C. Westfall
10. See Nichols – Jefferson drawing catalog, No. 4.
11. See Nichols – Jefferson drawing catalog, No. 7
12. See Macdonald, page 77
13. See Macdonald, page 48, Fig.15.
14. See Dennis, particularly pages 29-81
15. See Charles & Peter Miller, pages 64-65 and 77.
16. See J. Ellis, particularly chapter 2.
17. See Charles and Peter Miller, illustrations on pages 64 and 71.
18. See Macdonald, particularly pages 90, 91, 100, 104 and 171.
19. See C Westfall, page 4.

## ILLUSTRATIONS

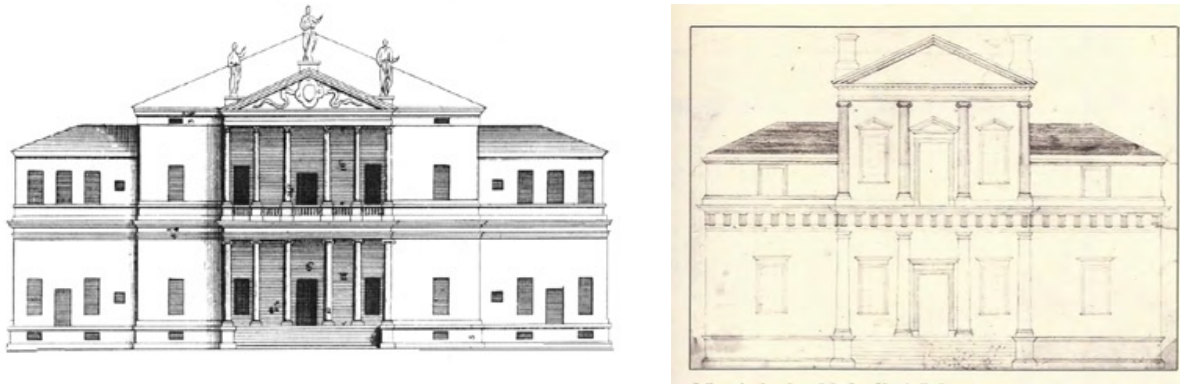


Figure 1 – Villa Coronado and the first design of Monticello – from Wikipedia and Nichols

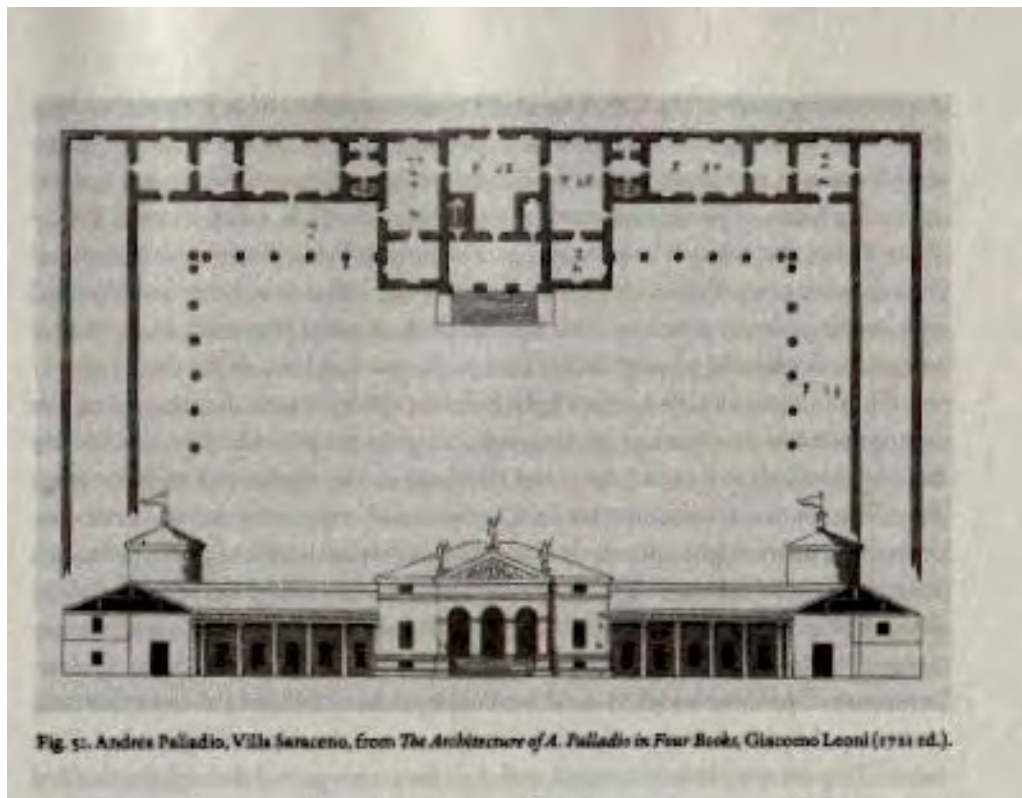


Figure 2 – Typical Palladian forecourt design – McDonald, page 99

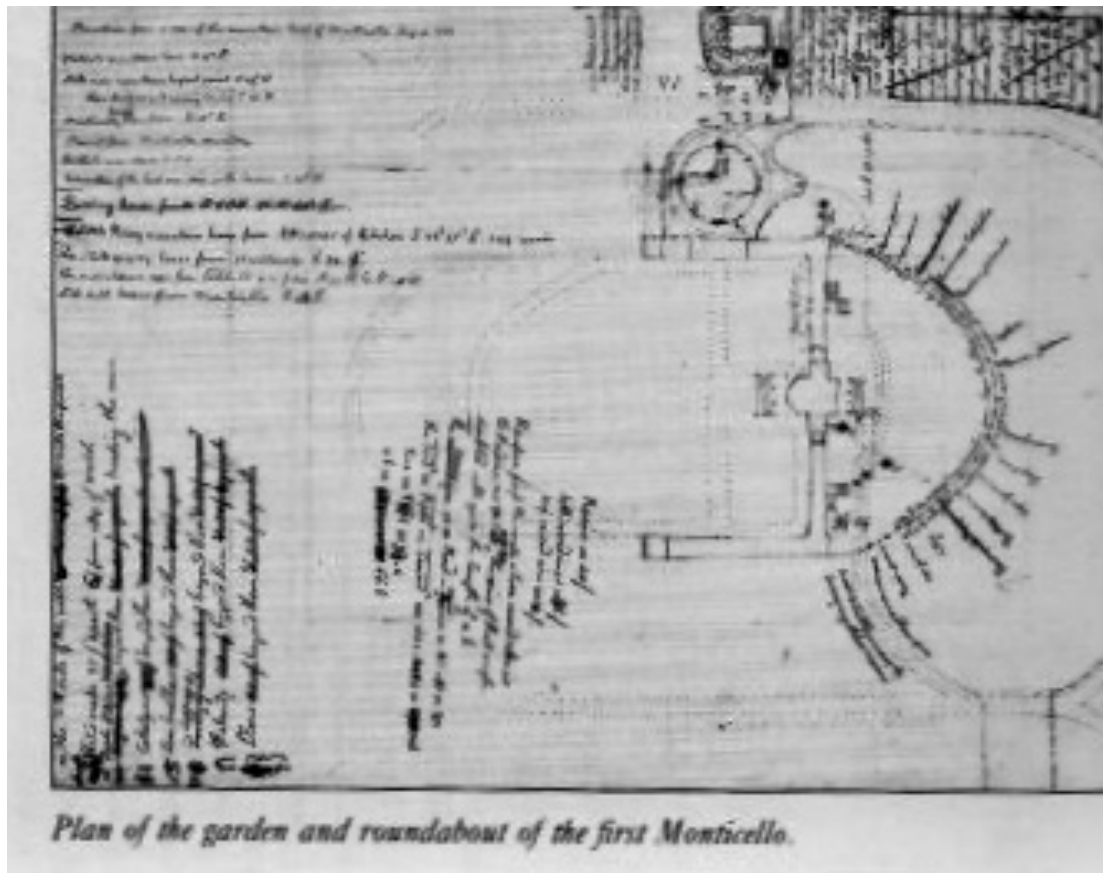
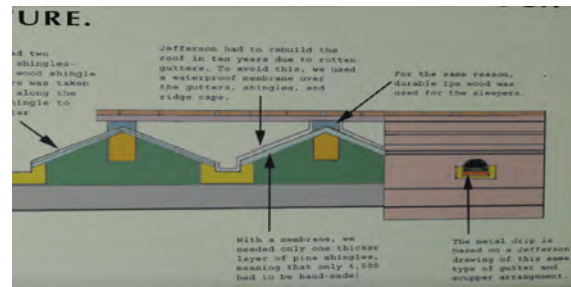


Figure 3 – Early Jefferson plan showing proposed roundabout and entries – McLaughlin, page 140

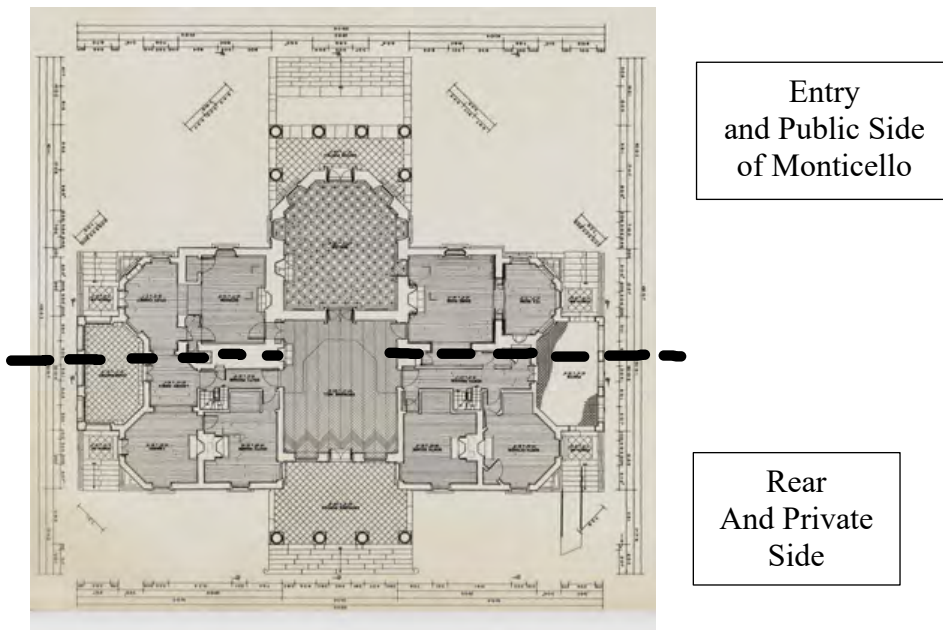


Figure 4 - American nickle and Monticello together - Photographs by Author



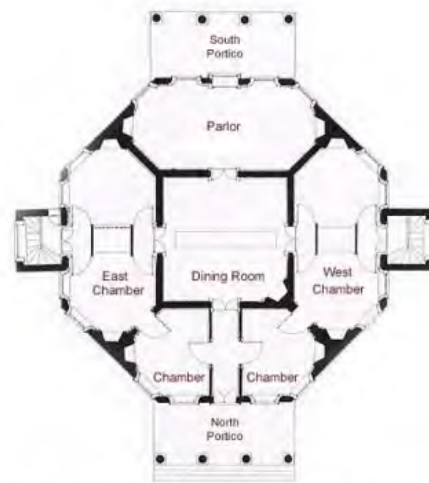


**Figure 5** –Southwest façade of Monticello – photograph by author and Exhibition panel describing Jefferson’s design of the Terrace at Poplar Forest (similar to rooflets at Monticello) - Photograph by author



**Figure 6** - Plan of the remodel of Monticello with simple public/private diagram – by author



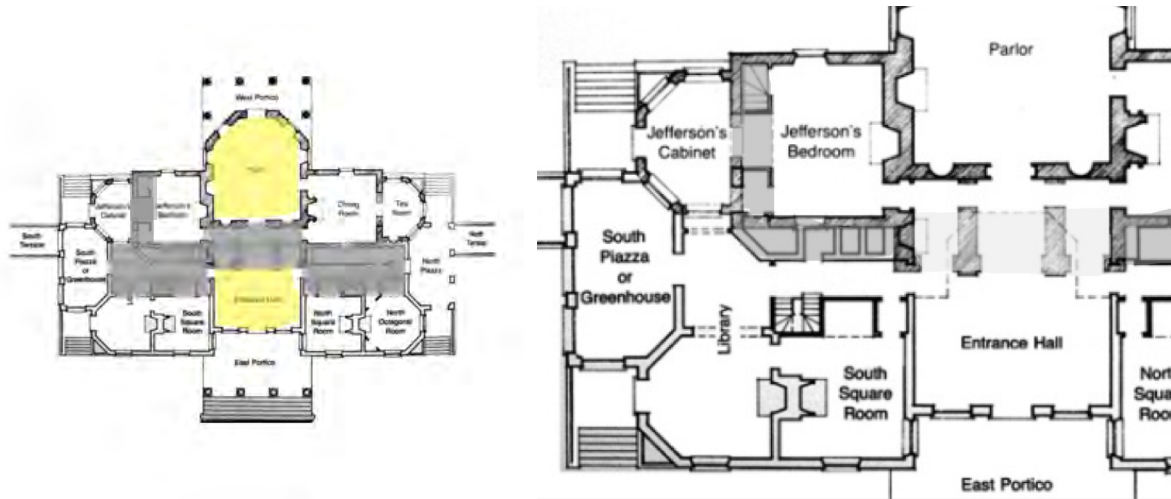


Floor plan of Poplar Forest, designed by Thomas Jefferson as his retreat near Lynchburg, Virginia. ©2012 Poplar Forest

**Figure 7** - Poplar Forest – Final Plan, MacDonald, pages 77 and 90



**Figure 8.** Hotel de Salm, Anonymous - <https://www.parismuseescollections.paris.fr/fr/musee-carnavalet/oeuvres/l-hotel-de-salm-en-construction-vers-1786-actuel-7eme-arrondissement#infos-principales>



**Figure 9** - Plan diagram showing Jefferson's deployment of Poché in general at Monticello and specifically Jefferson's bed in the poché – diagrams by author



**Figure 10.** Poplar Forest - Photo by Author of Poplar Forest

## **Traditional Dwellings and Settlements**

Working Paper Series

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### **THE IMPACT OF CULTURAL DYNAMISM AND TRADITIONS ON THE EVOLUTION OF CONTEMPORARY URBAN HOUSING TYPOLOGIES IN JAZAN REGION, SAUDI ARABIA**

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# THE IMPACT OF CULTURAL DYNAMISM AND TRADITIONS ON THE EVOLUTION OF CONTEMPORARY URBAN HOUSING TYPOLOGIES IN JAZAN REGION, SAUDI ARABIA



*This paper examines the impact of cultural dynamism and traditions on the evolution of contemporary urban housing typologies in Jazan region. The methodological approach is based on reviewing several case studies representing local urban housing typologies in Jazan to explore the sociocultural impact of new lifestyle patterns on spatial hierarchy, spatial organization, privacy, outdoor spaces, and façade design. The author carried out a comprehensive analysis of plans, images, direct observation, and in-depth interviews with local household residents. The selected case studies include governmental projects as well as private and non-governmental projects.*

*The research identifies that new lifestyle patterns and related cultural factors and traditions have strong impact on the evolution of new housing typologies in traditional communities and recommends that housing designers should adapt to the dynamic cultural practices, beliefs, and privacy needs of inhabitants when designing homes. Conclusions underline the major contemporary challenges for designing future housing typologies in Jazan.*

## 1. INTRODUCTION

The Evolution of new housing typologies in urban settlements and cities reflects the relationship between housing and lifestyles, people from different cultures and values have different houses<sup>1</sup>. The house can be perceived as a dynamic structure, it extends and changes in size and configuration according to their inhabitants' needs<sup>2</sup>. Houses reflect lifestyle, cultural values and traditional beliefs of their inhabitants. Where and how a human was raised will always affect their future housing choices<sup>3</sup>. The characteristics of lifestyles are a product of individual and collective processes within societies. According to scholar Saudi Arabia's architectural identity will evolve and adapt to social, environmental, and technological changes while retaining its unique cultural concepts<sup>4</sup>.

## 2. SOCIO-CULTURAL DEVELOPMENTS AND CHANGES IN LIFE STYLE IN SAUDI ARABIA

The concept of quality of life is complex, it includes a multitude of contributory facets such as housing, education, work and environment<sup>5</sup>. Saudi Arabia has undergone a remarkable transformation under Vision 2030, which has three main pillars: an ambitious nation, a thriving economy and a vibrant society. This Vision was framed with a nationalist discourse that emphasized "taking pride in national identity" by highlighting the importance of Saudi's position, culture and heritage. The Quality of Life Program as one of the realization programs of The Vision 2030, aims to improve the individual and families' quality of life by creating the necessary environment to develop and support new live-able and lifestyle options which include the

participation of citizens and residents in cultural, sports and entertainment activities that nurture the quality of life of the individual and the family. Enhancing a wide variety of sectors, the program focuses on the empowerment of arts and culture, promotion of sports and leading a healthy life, and the development of more livable urban areas. As well as creating exciting new sectors and diversifying economic activity, the program is bolstering local employment opportunities and beautifying cities across the Kingdom. These efforts led to a tremendous new social dynamics, cultural change, and impacts on the quality of life for all Saudi citizens. Women empowerment included: increased percentage of women's participation in the labor market, the ability to join the military, ability to drive cars, apply for passport, travel alone, vote and run for public office, setting up their own business, watching live sports, going to the cinema , enjoy doing physical exercise on the streets and in the gym .



Fig. 1: Socio-cultural developments in Jazan. (Source: Jazan municipality)

### 3. RESEARCH PROBLEM

This paper examines the impact of new lifestyle patterns and related cultural factors and traditions on the evolution of new urban housing typologies in Jazan region. Housing transformations included; building forms, functions, circulations, and spatial organizations. The main research question is how designers should adapt to the dynamic cultural practices, beliefs, and privacy needs of inhabitants to address the major contemporary challenges for designing future housing typologies.

### 4. RESEARCH METHODOLOGY

The methodological approach is based on reviewing purposively selected case studies representing local urban housing typologies in Jazan from governmental or private and non-governmental projects, to describe, analyze, and compare the similarities and differences between spatial hierarchy, spatial organization, privacy, outdoor spaces, and façade design. The author carried out a comprehensive analysis of plans, images, direct observation, and in-depth interviews with local household residents. The author adopted four main



indicators to assess the privacy of the dwellings<sup>6</sup>. The indicators are: the quantity of different hierarchical spaces, the existence of transitional spaces, the quantity of circulation accesses, and the existence of intermediate spaces between functional spaces (main distributor space or lobby).

	INDICATOR	RESULT	SCORE
1	Quantity of different hierarchical spaces	Multiple (More than two spaces)	1
		Double or single (two spaces or less)	0
2	Transitional spaces	Available	1
		Not Available	0
3	Quantity of circulation accesses	Multiple	1
		Single	0
4	Intermediate space between the functional spaces	Available	1
		Not Available	0

Table 1: Coding System of the Houses' Privacy Indicators<sup>6</sup>

The maximum score summation for any housing type will be 4 and the minimum will be 0, the privacy is considered very high if the score summation is 4; high if the score summation is 3; medium if the score summation is 2; low if the score summation is 1; and very low if the score summation is 0.

## 5. HISTORICAL BACKGROUND OF JAZAN REGION

Jazan is the capital of the Jazan Region, it is Saudi Arabia's third port on the Red Sea coastline situated in the southwest of Saudi Arabia, north of Yemen with a total area of 40,000 square kilometers<sup>7</sup>. According to the estimated figures of the General Authority for Statistics, the total population of the region is approximately 1,404,997 in 2022, representing an estimated 4.4% of the Kingdom's total population (32,175,224). Saudi national constitute 71.4% while 28.6% are non-Saudi. 57.0% are males and 43.0% are females. The total number of household in Jazan is 309,401 with an average size of 3.7 per household.

In Jazan region the communities are conservative, people share cultural values, such as hospitality, loyalty and a sense of duty to support their community. It has a family-oriented culture, where three to four generations may live together with the elderly members as head of the family<sup>8</sup>. Rules of gender separation are not strict laws, but rather social norms, the difference between male and female roles and responsibilities in their everyday life is noticeable. The clear segregation and gender separation influences and determines spatial hierarchy, spatial organization, and privacy within the house.

Scholars<sup>9</sup> identified four main historical architectural types in Jazan : The Usha (singular) and Ushashash((plural) in Central Tihama , The Farasan type in Farasan island, The Adaressa type in western coast, and the high land and mountain type in Fefa and Bani-malik in Eastern areas of Jazan region<sup>10</sup> .



Fig. 2: Four main historical architectural types in Jazan. (Source: [www.archaeology.sa](http://www.archaeology.sa) ).

## 6. URBAN HOUSING TYPOLOGIES IN JAZAN REGION

Britannica Dictionary definition of TYPOLOGY is:

*"a system used for putting things into groups according to how they are similar: the study of how things can be divided into different types."*

There is a variety of urban housing types in Jazan , For this research, the author classified urban housing typologies of the case studies according to their spatial hierarchy, spatial organization, privacy, outdoor spaces, and façade design in addition to building materials and construction technologies used. Analysis of case studies included unit layout, number of floors, number of rooms, division of areas, gender segregation. Four main urban housing typologies are observed: early transitional traditional house, modern villa , town house , and apartment in a multi-story building .

### 6.1. Early (Transitional Traditional) House

This type of houses usually accommodates an extended family with three to four generation living together. The most common type is a larger detached building with setbacks at least 150cm on four sides, surrounded by a high exterior wall ( 1,80 – 2,00 m ), height to confirm privacy, with separate entrances and clear segregation between male and female sections to provide privacy for family members and women . Three examples for this type , built in (1990-2010) in Jazan are analyzed. The spatial organization is divided into three zones public for guest male guest, semi-private for family living but accessible for male family members ,and private zone for female family member and female guests.

The visibility of the interior space from outside is very low due to small opening size and height , the surrounding yard has no clear partition for female family members , the building form is simple solid cube with no balconies or terraces. The privacy indicator for the cases is high (summation 3) .



Fig. 3: Early (Transitional Traditional) House examples . (Source :author )

	INDICATOR	RESULT	SCORE
1	Quantity of different hierarchical spaces	Multiple (More than two spaces)	1
2	Transitional spaces	Not Available	0
3	Quantity of circulation accesses	Multiple	1
4	Intermediate space between the functional spaces	Available	1

Table 2: the Early (Transitional Traditional) Type Privacy Indicators (Source :author )

## 6.2. Modern Villa Type

For this type the author considered King Abdullah housing project in Jazan suburbs, located on the northern of Jazan city approximately 23 km from King Abdullah Airport and 15 km from Jazan University . It is a residential project consisting of 4,170 villas with three design models. The villa accommodates families with (4-8) family members. The plot area range (400-500) square meters with (4-6) bedrooms and the total built area range is (280-342) square meters. It is a detached three story building , with setbacks at least 150cm on four sides, consists of (4-6) bedroom , with separate reception areas and entrances for male and female sections to provide privacy for women . The spatial organization is divided into three zones public for guest male guest, semi-private for family living but accessible for male family members ,and private zone for female family member and female guests. The visibility from the interior space to the outside is quite good due to large size glazed opening , the surrounding yard with no clear segregation or partition but the terrace on the roof is separated to two for males and females) , the building form is articulated with roof terrace . The privacy indicator is very high (summation 4) .



Fig. 4: Modern Villa examples . (Source :author )



	INDICATOR	RESULT	SCORE
1	Quantity of different hierarchical spaces	Multiple (More than two spaces)	1
2	Transitional spaces	Available	1
3	Quantity of circulation accesses	Multiple	1
4	Intermediate space between the functional spaces	Available	1

Table 3: Modern Villa Type Privacy Indicators (Source :author )

### 6.3. The Town House

For this type the author considered the Muhammadiyah Residence project , located in North Jazan only (1) km from jazan University and (1,3) km from North sea water front and the commercial city center. It is a residential project consisting of 96 villas with two design models. The villa accommodates families with (4-6) family members . The plot area range (300-600) square meters with (4-6) bedrooms and the total built area range is (312-456) square meters. It consists (4-6) bedroom , with separate reception areas for male guests and separate entrances for family sections to provide privacy for family members. The spatial organization is divided into three zones public for guest male guest, semi-private for family living but accessible for male family members ,and private zone for female family member and female guests. The visibility from the interior space to the outside is quite good due to large size glazed opening , The yard is designed to provide outdoor areas for both male guest and family members , The terrace on the roof is separated for males and females , the building form is articulated with roof terrace . The privacy indicator is very high (summation 4) .



Fig. 5: Town House examples . (Source :author )

	INDICATOR	RESULT	SCORE
1	Quantity of different hierarchical spaces	Multiple (More than two spaces)	1
2	Transitional spaces	Available	1
3	Quantity of circulation accesses	Multiple	1
4	Intermediate space between the functional spaces	Available	1

Table 4: Town House Type Privacy Indicators (Source :author )

#### 6.4. Apartment in a Multi-Story Building

For this type the author considered Jazan Jawhara 2 project , the project consists apartment blocks of (3-4) stories building , the floor area of flats range (157-217) square meters, the apartment components is (2-5) bedroom , with separate reception areas for male guests and separate entrances for family sections to provide privacy for family members. The spatial organization with clear circulation axis and service lobby, is divided into three zones public for guest male guest, semi-private for family living but accessible for male family members ,and private zone for female family member and female guests. The visibility from the interior space to the outside is acceptable with glazed opening. The privacy indicator is very high (summation 4) .



Fig. 6: Apartment In A Multi-Story Building Type. (Source :author )

	INDICATOR	RESULT	SCORE
1	Quantity of different hierarchical spaces	Multiple (More than two spaces)	1
2	Transitional spaces	Available	1
3	Quantity of circulation accesses	Multiple	1
4	Intermediate space between the functional spaces	Available	1

Table 5: Apartment In A Multi-Story Building Type Privacy Indicators (Source : author )

### 7. THE COMPARATIVE ANALYSIS OF URBAN HOUSING TYPOLOGIES IN JAZAN REGION

The comparative analysis for the selected case studies is summarized as shown in fig 7.





Fig. 7: The comparative analysis for the selected case studies ( example). (source :author ).

## 8. CONCLUSION

The research identifies that cultural factors and traditions have strong impact on the evolution of new housing typologies in Jazan . There is a need for new types of housing which fulfill the **people's** new lifestyle patterns but preserves their values, practices, activities, and the level of privacy needs. Designers need to develop creative design solutions, that are socially, environmentally , economically sound . The major challenge is to find the proper balance between cultural factors and traditions, housing designers should adapt to the dynamic cultural practices, beliefs, and privacy needs of inhabitants when designing homes , the research recommends that further research is needed to fill the gap .

## NOTES AND REFERENCES

<sup>1</sup> Rapoport, A." Housing and culture". In L. Taylor (Ed.), "Housing: Symbol, structure, site" New York, NY: Rizzoli, 1991, p. 14-16.

<sup>2</sup>Hanson, J. "Deconstructing' Architects' Houses" . Environment and Planning B: Planning and Design", 21(6), 1994.

<sup>3</sup>Freeman, L.. Interpreting the dynamics of public housing: cultural and rational choice explanations, *Housing Policy Debate* 9(2),1998, p. 323–353.

<sup>4</sup>Alnaim, M.M. " Understanding the Traditional Saudi Built Environment: The Phenomenon of Dynamic Core Concept and Forms". *World Journal of Engineering and Technology*, 10, 2022, p. 292-321.  
<https://doi.org/10.4236/wjet.2022.102019>

<sup>5</sup> Blanco, A. and Chacón, F.. La evaluación de la calidad de vida[The evaluation of the quality of life]. In J.F. Morales, A. Blanco, C. Huici y Fernández: *Psicología Social Aplicada [Applied Social Psychology]*. Bilbao: Desclée de Brouwer , 1985.

<sup>6</sup> Al Husban, S. A. M., Al Husban, A. A. S., & Al Betawi, Y. (2021). The Impact of the Cultural Beliefs on Forming and Designing Spatial Organizations, Spaces Hierarchy, and Privacy of Detached Houses and Apartments in Jordan. *Space and Culture*, 24(1), 66-82. <https://doi.org/10.1177/1206331218791934>

<sup>7</sup> Future Saudi Cities Programme , City Profiles Series: Jazan © 2019. Ministry of Municipal and Rural Affairs , King Fahd National Library Cataloging-in-publication Data , Ministry of Municipal and Rural Affairs , Jazan City Profile. / Ministry of Municipal and Rural Affairs , Riyadh, 2019 , ISBN: 978-603-8279-27

<sup>8</sup>Al Surf , M. ,Connie S., Susilawati B., Trigunarysyah B. "Analyzing the Literature for the Link between the Conservative Islamic Culture of Saudi Arabia and the Design of Sustainable Housing" , 2<sup>nd</sup> International Conference Socio-Political and Technological Dimensions of Climate Change At: Kuala Lumpur, Malaysia , 2012 .

[DOI: 10.13140/2.1.3902.0805](https://doi.org/10.13140/2.1.3902.0805)

<sup>9</sup> Contemporary Residential Areas as an Example of Tradition-led Urban Design in Islamic Cities. Case study of Jazan in Saudi Arabia ,2022. <https://doi.org/10.4467/25438700SM.22.006.16106>

<sup>10</sup> Ahmed ,S."The traditional architecture in jazan city, between the past and today" , 2012.



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