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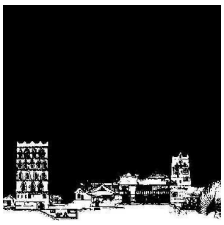

TRADITIONAL DWELLINGS AND SETTLEMENTS WORKING PAPER SERIES

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THE INDIGENOUS RESISTANCE OF INTERSTITIAL SPACES: PEOPLE, BUILDINGS, AND STREETS IN SHANGHAI'S URBAN HISTORY

Hao Wang

THE INDIGENOUS RESISTANCE OF INTERSTITIAL SPACES: PEOPLE, BUILDINGS, AND STREETS IN SHANGHAI'S URBAN HISTORY

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This paper examines how Shanghai's interstitial spaces—irregular plots, alleys, and watercourse remnants—serve as sites of indigenous resistance against homogenizing forces of globalization from historical urban elements. Analyzing projects of present urban renewal, it argues that "intermediate technology" and arrière-garde strategies foster human-scaled urban renewal, countering placelessness induced by cars and real estate. By integrating Jiangnan Shuixiang heritage with multi-sensory design, these spaces revive local identity and belonging. The study concludes that preserving such "imperfect" interstices is vital for sustaining urban vitality and cultural distinctiveness amid universal technological advancement.

1. INTRODUCTION

With the advent of Generative Artificial Intelligence (AIGC), human creativity, while reliant on advanced technology, has subtly shaped the universal civilization of the artificial intelligence 2.0 era. In fact, AIGC is not a new thing that has materialized out of thin air in the present. As early as the 1950s, there was music composed by computers, *The Illiac Suite*. In the field of architecture, humans should have accumulated enough experience to cope with the "universal civilization" led by technologies. To a certain extent, China's current urban appearance is a product established on the basis of modern technological civilization, with broad roads and towering buildings being the most typical image of Chinese cities have integrated into the modernization of the world. But the experience in the field of architecture may give today's people some warnings: is advanced, optimized, or universal necessarily positive?

Paul Ricoeur once acutely observed that the advancement of globalization risks eroding the creative core of cultural interpretation [1]. In the view of Kenneth Frampton, the urban landscapes of today's world are dominated by two modern tools: the widespread use of cars has given rise to broad roads (and overpasses) throughout the city; while real estate, based on the law of land value, has led to the dense construction of skyscrapers[2], both of which have caused a monotonous modern urban landscape, that is, a clone city syndrome （Figure 1).

Although European architecture had fallen under the dominance of science and gradually become lifeless machines since the 17th century, architecture could still rebuild a kinship with humans by imitating them. In other words, architecture can become the materialization of human life, thus possessing a unique character. During the time at the Ecole des Beaux-Arts, character was still one of the basic issues of architecture, but after it was misinterpreted as "facade treatment", architecture seemed to become formal research. The design

of architecture and cities relies on formal logic to meet the needs of spatial economy, and then, driven by an endless stream of advanced technologies, it gradually became a vassal of technology. However, the city architecture includes not only a tangible building but also the people who build it, live in it, and discuss it.

Figure 1 The birdview of Shanghai

> "It is an artefact—an artefact of a curious kind, compounded of willed and random elements, imperfectly controlled."
>
> Joseph Rykwert[3]

2. UNIVERSAL CIVILIZATION AND THE "POINT" OF PLACELESSNESS

With the "Universal civilization," China's urbanization level has rapidly increased in the past nearly 40 years, with a large number of immigrants gathering in cities. Shanghai, as the most populous city in China, hosts 10.77 million "new citizens," accounting for over 40% of its total population. The bizarre and colorful urban images may immerse them temporarily, but they cannot change the fact that these residents lack a sense of belonging to the city. The sense of placelessness undoubtedly intensifies the alienation between people and the land. For example, delivery riders and other "new citizens" are like randomly moving "dots" in the urban space, constantly bustling about but struggling to find a "place" to stop and intersect.

Widespread broad roads and high-rise buildings today can no longer bring visual impact and pleasure to urban residents but have become a barrier to the livability of the city. In high-density cities like Shanghai, endless traffic congestion and life confined to high-rise residential buildings drive urban residents to seek alternative way of living. With the promotion of the Internet and transportation technology today, urban residents' daily lives have emerged with "spatial breakpoints". In the eyes of these urban residents who are crated in attics, the world may have evolved into a discontinuous space composed of "check-in spots", and they have lost the perception of nearness. They can rattle off the of "check-in spots", tens of kilometers away and reach them quickly by means of transportation. They can also have their daily needs met by delivery riders. After losing the necessity of walking such a uniform and slow movement, urban residents even find it difficult to have a clear understanding of the lawns in front of their apartments or the shops nearby.

Therefore, the current urban renewal needs to be a process of using architecture to resist "universal civilization", creating a sense of belonging for these "new citizens". Frampton, facing the impact of "universal civilization" represented by cars and real estate, once pointed out that an architecture of resistance was necessary. The main task of today's urban renewal should be to solve the common problem of placelessness in high-density megacities.

3. RESISTANCE FROM THE INTERSTICES OF SHANGHAI

The urban modernization process experienced by Shanghai can become a local culture's "resistance" to universal civilization; it is also a history. As one of the earliest Chinese cities to accept the input of Western modernization development models, Shanghai developed a unique "Haipai Wenhua (海派文化，Shanghai style culture)" in the face of the collision of "universal civilization." The unique social and geographical environment made Shanghai not only a suitable location for the implantation of modern capitalist economy but also give the internal ability of resistance. This resistance became legible and continued to play a role through the "points" in the urban form; it has been functioning continuously.

Before becoming the treaty port, Shanghai was a remote feudal town. Compared to other cities at that time, Shanghai, as a commercial town, had better conditions for transitioning to a modern city with the western pattern. However, its essential attribute as a feudal city prevented it from becoming a cultural "colony" completely. Shanghai was on the periphery of Confucian culture[4]. As an important document that laid the basic layout of modern Shanghai, the *Land Regulations* was an unequal product imposed by Western powers on Shanghai, but in its five revised versions, it repeatedly emphasized the public nature of the original watercourses and established the principle that Chinese graves should not be moved arbitrarily. Although Shanghai people could more freely break free from the constraint of traditional official culture "Li (礼，

rituals)" to build and develop the city in a utilitarian manner, they could not completely ignore the role of ancestor worship. During the construction of roads, there was a subtle "interstice" in ideas between utilitarianism and ancestor worship （Figure 2）.

This "interstice" in ideas was directly projected onto Shanghai's urban space. The urban road construction in modern Shanghai significantly inherited the spatial form of watercourses from the agricultural period, saving land acquisition costs while avoiding disputes caused by destroying local people's graves. The Taihu 太湖 basin where Shanghai is located has undergone nearly a thousand years of farming transformation, forming a basic pattern of watercourse matrix, which is a product of the combination of natural environment and artificial transformation, with many partial mutations in its lines. When the modern city development concept driven by real estate development was implanted in Shanghai, there was also an interstice in space between the utilitarian street system and the watercourse matrix, namely the irregular plots inherited from the agricultural period. Although the architectural forms after Shanghai's as a treaty port were significantly characterized by Western culture, the urban spatial morphology was still typical of the "Jiangnan Shuixiang (江南水乡, canal towns in the Taihu basin)." In other words, the watercourses are the material carrier of Shanghai's "Shuixiang wenhua (水乡文化, the culture of canal towns)" resisting the full invasion of "universal civilization," and thus can selectively absorb and form the "Haipai Wenhua".

These irregular plots from the agricultural era have also given rise to the richness of Shanghai's urban images. The plots at the "mutation" points of the grid-liked street system are difficult to adapt to large-scale, standardized real estate development models, such as the construction of alleys （Figure 3）. Instead, high-rise apartments located at the corners of the block, garden villas, or corner parks such as these personalized "unique pieces" have emerged as an inevitable irrational outcome. These small-scale plots and buildings cannot be accurately depicted on large-scale maps, but they have become undeniable "points" due to their uniqueness. The irregular interstice in space have become the reason why the city can maintain its individuality and resist the acid rain of real estate, a universal technical means.

Due to the history of the city, Shanghai's architects naturally possess the experience of functional densification under micro scale spatial constrains, which is the experience of urban development. By utilizing the interstices left by the modern urbanization process of the past 100 years, architects have been able to exert their design skills in urban renewal. Based on ways of living, urban renewal continues to create a unique urban culture for this city. In this process, Shanghai's architects are in the "arrière-garde" position as claimed by Frampton, creatively interpreting ways of livings in the linear space of the city.

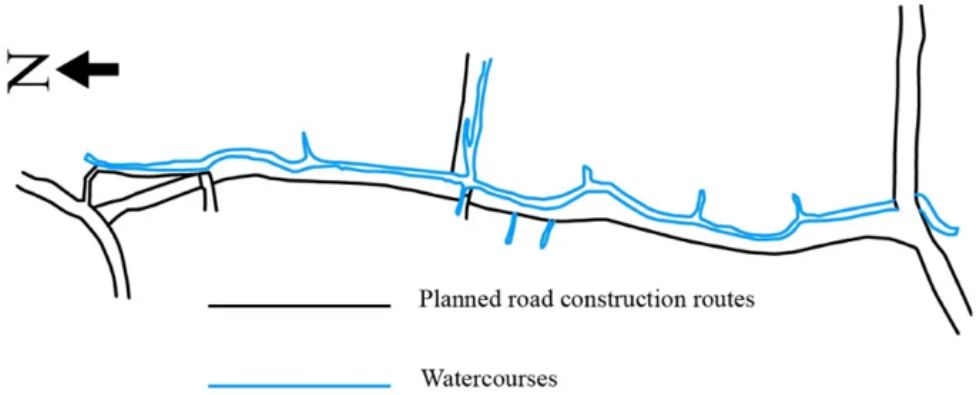

Figure 2 The road and watercourse (source: redraw based on Shanghai City Archive U38-4-2148)

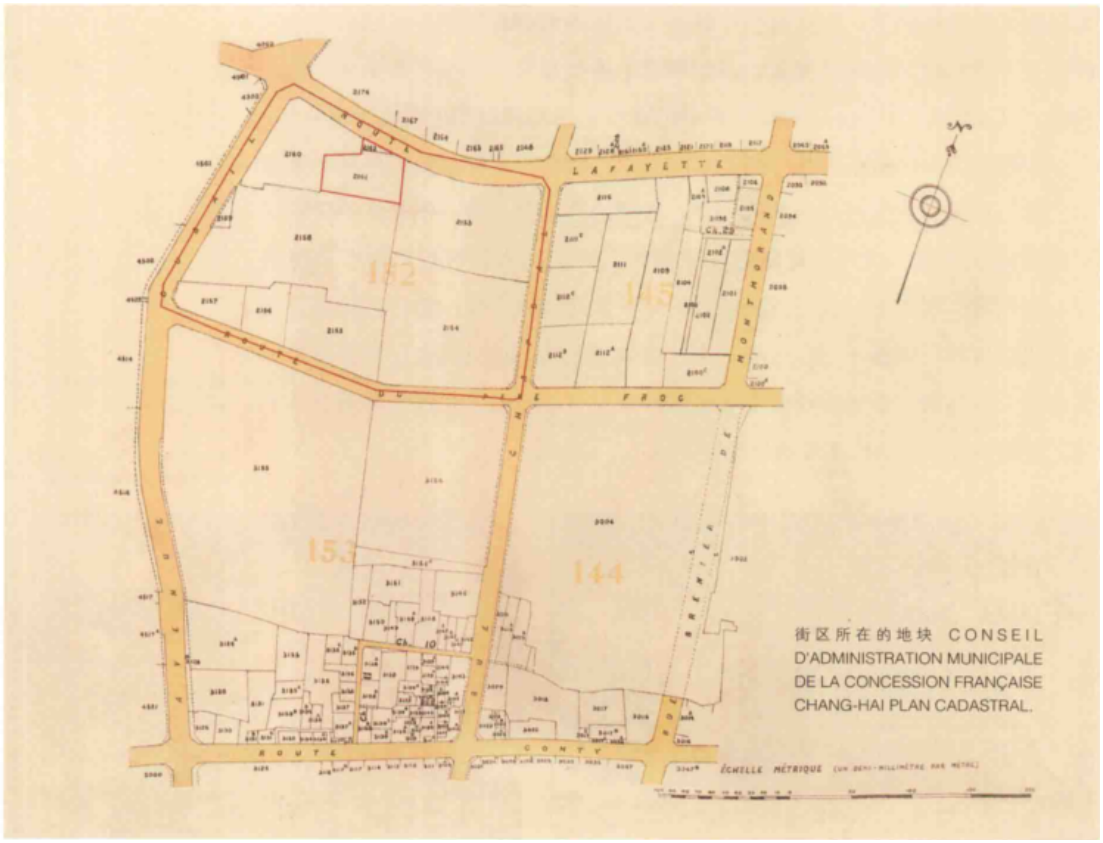

Figure 3 A typical neighborhood plan of Shanghai 1941 (Source: Conseil D'Administration Municipal De La Concession Francaise)

4. TECHNOLOGY WITH HUMAN FACE

Frampton refers to the "arrière-garde" as a position relative to the "avant-garde", which is a positioning between innovation and nostalgic retro. Urban renewal design starting from the " arrière-garde " position should be cautious in using the most advanced universal technology to avoid forming a unique "optimal solution," and should not fall into the trap of being stuck in "traditional style" decoration. Frampton attempts to seek a concept of " arrière-garde " that transcends the binary opposition between advanced and traditional, world and local, and commonality and individuality, and reconciles the contradictory aspects of culture and civilization[5]. This is exactly what economist E·F·Schumacher advocated for in his "intermediate technology."

"Intermediate technology" is a method of technology that lies between advanced technology and traditional technology and is a technology that conforms to human scale. "Intermediate technology" has the characteristics of being easy to master, low dependence on raw materials, and strong market adaptability, and is therefore also called a "technology with human face" by Schumacher. In Schumacher's view, the human body is small, and many "advanced technologies" are massive, ultra-fast, and violent, which are easily beyond human control, making humans become the slave of technology. If technology needs to have a human nature, it needs to adapt to the "actual size" of humans, fully utilize the clever brain and skillful hands, and use first-class tools to assist them[6].

In the development over the past 40 years, the related technology in the field of architecture has been one of the areas where China leads the "universal civilization", and the urban image of China also fully demonstrates this leading advantage. The strong technological capability allows cities to carry out large-scale demolition and construction with abandon, but it has also eroded the traditional urban personality. Until today, many modern industrial infrastructure remnants still exist in the core area of Shanghai. These large-scale structures and spaces created by advanced technology at that time also need to be resolved into living infrastructure that conforms to human size. Fortunately, the "intermediate technology" adopted by Shanghai's urban renewal is helping the city resist the "flood tigers" we have created ourselves. In these urban renewal cases, steel structures are the main structural form, but they are not used as usual to create large-span "spectacles" that exceed human size. On the contrary, architects use steel structures more to play their delicate characteristics to create a familiar atmosphere and provide the city with a localized resistance through this gardened microcosm experience.

In the Caoyang Centennial Park 曹杨百禧公园, the architects attempts to reshape the city's surface in a humanized manner （

Figure 4）. Located in the first worker's village in China, Cao Yang New Village, the site was originally used for a section of railway extending south from Shanghai West Railway Station. After the decline in freight demand, it was transformed into a market of about 800 meters long and was demolished in 2019. Cao Yang New Village followed the topographical conditions of the "Jiangnan Shuixiang" in Shanghai from the beginning of its construction, forming an organic spatial structure along the preserved riverbanks. This makes Caoyang Centennial Park have various non-perpendicular spatial relationships with the residential buildings on both sides during the process from north to south. With a rich environment, architects use only 25-33 cm thick I-beam girders to reshape the flat site transformed by advanced technology meter by meter. Two light, airy corridors at two heights of 2.4 meters and 3.8 meters create different perspectives and experiences. On the top level, the ramp extends from 3.8 meters to 4.5 meters in height, winding and winding like a corridor in a garden, where pedestrians wander as if they are in a garden walkway[7]. In Caoyang Centennial Park, steel structures are no longer used to create skyscrapers over a hundred meters tall, but rather like continuous undulations between natural landscapes.

In the Riverside Passage 边园 built on the industrial wharf, the most impressive architectural element must be the two rows of slender and exquisite steel column arrays （Figure 5）. The Riverside Passage is located in a 7-meter-wide interstice space between the wharf of Yangpu Road Gas Works 杨浦路煤气厂 and the Huangpu River 黄浦江. Its base is a wall about 9 meters long and 4 meters high. In the modernist architecture of Le Corbusier, the continuous repetition of the column arrays is considered the most economical and universally creative space-forming means. The 50mm diameter column arrays support a similarly delicate sloping thin roof, forming a sharp contrast with the rough long wall base of the original industrial infrastructure, and shaping two completely different spatial experiences of openness and compactness on both sides of the long wall[8]. The rough long wall base and the light column arrays and sloping roof actually correspond to the three basic elements of the Chinese classical architecture summarized by Lin Huiyin 林徽因 and Liang Sicheng 梁思成 : the base, column beams, and roof. In the Riverside Passage, just through a roof, the ruins, weeds, and wild bushes in the site are included in a space, forming the elements needed for a garden, providing spaces for basic activities such as solitude and gatherings. And the technology to create this roof is neither the most advanced nor retro.

Using gardens as a method to intervene in the existing spatial structure of the city is a positive attempt at local practice. In the Changwu Residential Compound 昌五小区 of Pudong, a curved corridor nearly 800 meters long is placed on the boundary of this old residential area built in the 1990s, providing residents with a linear leisure garden, namely Changli Garden 昌里园. The site where Changli Garden is located was originally an

arched area occupied by illegal constructions at the edge of the residential area, its line coinciding with that of Nan Matou Road 南码头路. It is not difficult to see from the review of the development of Shanghai that this is also a typical urban interstice. The "gardenization" theory of Changli Garden is mainly reflected in the "borrowing" of the corridor's direction[9]. The corridor does not form a smooth arc like a road for vehicles, but is compressed by the buildings on the west side, forming multiple segments of curves, creating a winding and winding pedestrian passage space（Figure 6）. The corridor uses cement bricks as the main material for enclosure, supported by a steel structure frame, and opens or covers according to the landscapes, buildings, and infrastructures, etc., on both sides of the site, forming a rich and varied physical experience with its direction, adapting to the local conditions. The architectural technology here seems to have retreated to an almost imperceptible position, and the rough texture makes the updated Changli Garden does not seem "new" compared to the surrounding buildings. Like the meaning of near and far in Heidegger's technical concept, when technology brings the target close, people are "occupied" by the target and the original thing in front of them is ignored by technology.

Figure 4 Caoyang Centennial Park (Source: China Pavilion at the 18th Venice Biennale of Architecture)

Figure 5 Riverside Passage (Source: China Pavilion at the 18th Venice Biennale of Architecture)

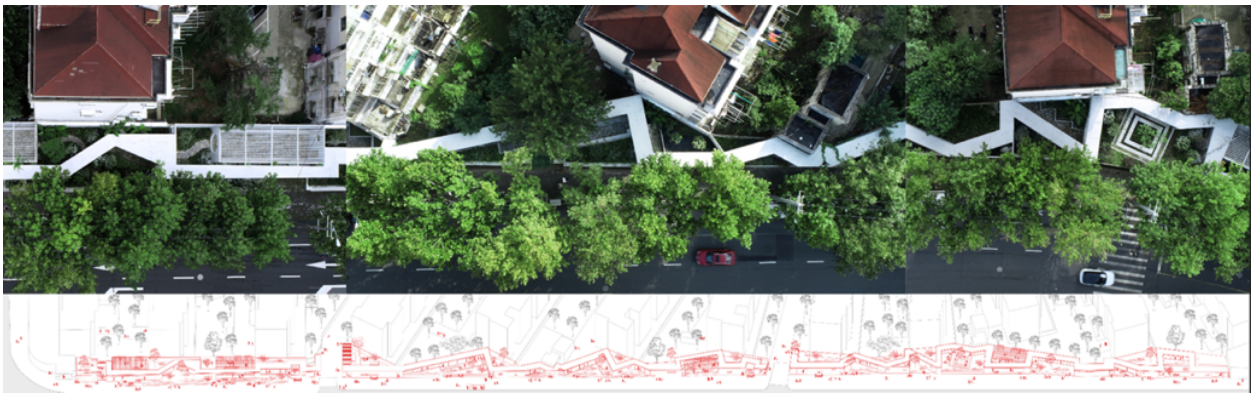

Figure 6 Changli Garden (Source: China Pavilion at the 18th Venice Biennale of Architecture)

The use of intermediate technology is also a reflection on how technology should affect the spatial experience. Architectural technology has continuously developed through the construction of skyscrapers, but the original intention of building skyscrapers cannot be "technically" explained. Skyscrapers do not have an advantage in land use efficiency, perhaps just a "dwarf" using visual misalignment to deceive the world (Figure 7) [10]. Therefore, the reflection on the abuse of technology is also a criticism of the past "visual-first" concept. Taking the "surface" space in the city as a carrier, Shanghai architects have gradually brought architecture back from pure visual art to a place that provides a composite perception.

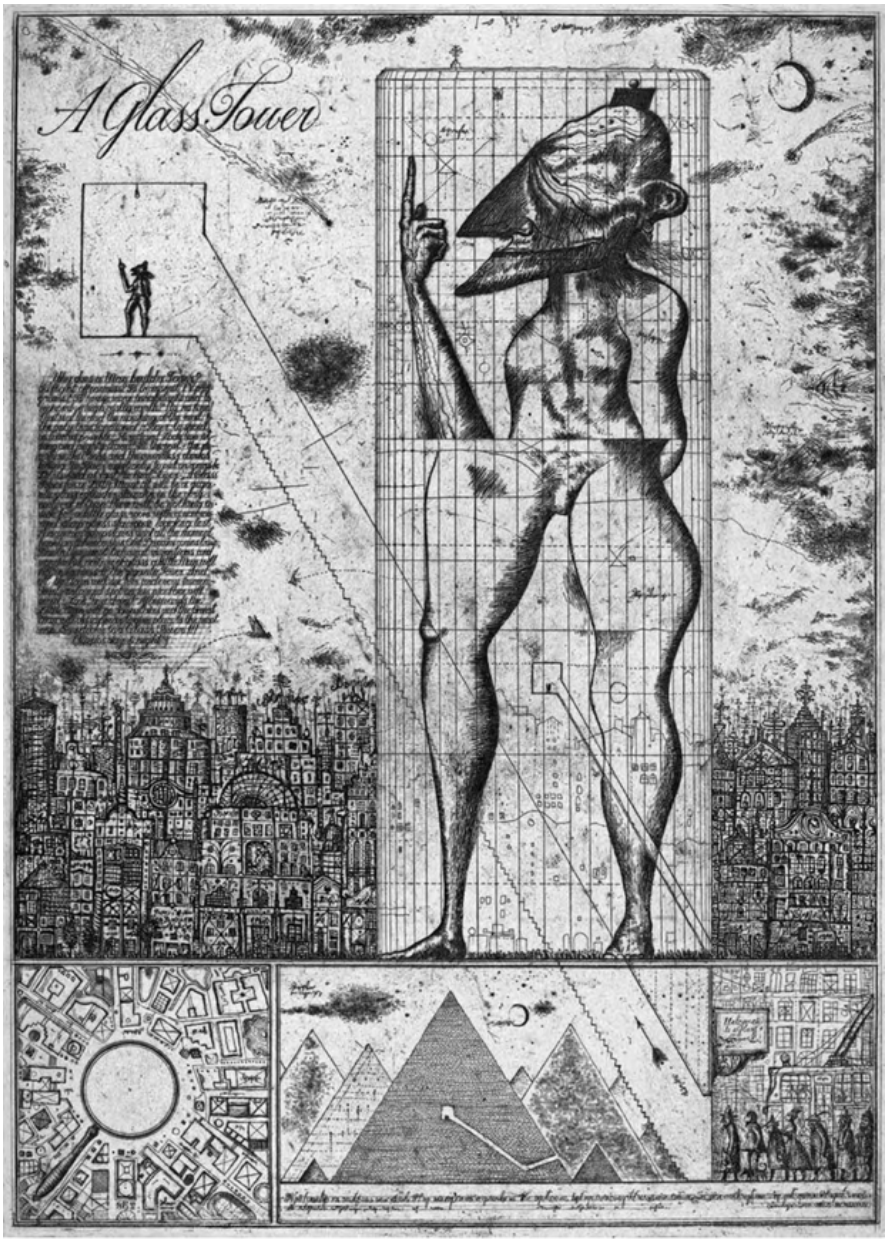

Figure 7 The glass tower of dwarf (source: Brodsky and Utkin: The Complete Works)

5. THE COMPREHENSIVE EFFECT OF THE SENSES

The nature of the surface where we live is inherently diverse, and over tens of thousands of years, it has shaped our senses through the way we observe the world. Compared to other animals, humans consciously rely on vision to perceive the surrounding environment. The ability to clearly perceive the distinction in color is an important feature that distinguishes primates from other mammals. Light holds a crucial position for humans in pursuing habitability, allowing us to better observe the distinction in form of objects through differences in light and dark in a bright world. In the development over the past 100 years, the trend of architecture evolving into a formal art for visual experience has gradually become prominent. However, when visual stimulation is continuously amplified by architectural spectacles, other senses are neglected.

In fact, people's perception of space can be very diverse, requiring multiple senses to jointly complete the construction of awareness. By combining materials in space, warmth and coldness, moisture and dryness, and delicacy and coarseness can all enrich the experience in space. Yi-fu Tuan points out that when space is perceived only visually, people are often in a spectator position, making it difficult to evoke a strong emotional experience. For example, when a medieval cathedral can still attract modern tourists, the reason is not only its towering space but also the combined effect of multiple senses. By creating a space different from everyday life with ambiguous light, these perceptions also allow people to experience that this is a building made of rough, thick stone, rather than the skyscrapers enclosed by glass today. Although both churches and skyscrapers create vertical visual spectacles, the tactile experience of materials, jointly constructed by vision, hearing, and even smell in cathedrals, is an experience that the latter cannot provide[11].

The architectural response to locality should transcend the simplistic stage of stimulus-satisfaction populism. The shaping of space needs to develop from catering to the majority through the emotional appeal of imagery to abstract and transform local elements using the crafts of design, to evoke the memory of place on a human scale. In the practice of urban renewal in Shanghai, their forms are not as easy to depict as a whole as the spectacle architecture. However, architects achieve this by making the boundaries in space more obvious, in order to offset the vastness felt by people inside. The form itself is not the goal pursued; its essence needs to return to combining materials using design, shaping people's feelings in space while solving problems, adapting to local conditions or keeping up with the times[12].

Wood is the most distinctive feature of Chinese architecture, and this ancient yet evolving material is also widely used in the urban renewal of Shanghai to soften the cold, monotonous, and functional image of urban

infrastructure. The Station Under Bridge 桥下驿站 is located in the northwestern arch of the Wuning Road Bridge 武宁路 in Putuo District 普陀区, within a cramped space of less than 500 square meters, which accommodates toilets, lounges, cafes, and a grandstand,. The slope along the arch is a "city grandstand," together with the cafe, becoming a place for residents to gather and relax (Figure 8)[13]. The largest area of the station is the openable exhibition space located on the south side, which, when opened, forms a "surface-liked" underground theater with the "city grandstand" on the north side. In such a diverse yet narrow space, the distance between people-people and people-environment is shortened. It is not difficult to imagine that such a place located in the central urban area and with rich functions must be full of vitality. Although the space under the bridge is inevitably flawed, when one is in such a place wrapped in wood and filled with intimate human interaction, the material, inseparable from culture and history, draws people away from the current urban situation. The noise and vibration of cars, along with the bustling crowd, instead form a background atmosphere with a sense of urban vitality. Under the intervention of design, the auditory flaws of the space have become elements for shaping the atmosphere, used to activate the originally abandoned space, creating a more high-quality community interaction.

At 309 Yongjia Road Pocket Park 永嘉路口袋公园, architects create a relaxed everyday state through the combination of materials. The pocket park is located between crowded old-style terraced house neighborhood, covering an area of about 75 square meters (Figure 9). Compared with the dense buildings around, the pocket park is only enclosed by a circle of open corridors, forming "an open space with a sense of privacy and domain." Such a contradictory space comes from the shaping of the open corridor form. The lowest point of the continuous open corridor is only 2.1 meters, supplemented by a slightly elevated ground of 50 centimeters to create a "tangible" space scale. The leisurely and lively atmosphere inside the pocket park, although permeating outward through the open arcade, can only be experienced from a lower position by pedestrians, and the sense of perspective is weakened, making it difficult to get a full view. The sense of enclosure in space and the visual weakening enhances the introverted character of the pocket park. The "complex and redundant" structural system of the arcade further enriches the "delayed" experience in the space[14]. The steel and wood structure supporting the arcade presents a distinct image of heavy at both ends and light in the middle. The vertical construction of the arcade is merely composed of two steel columns, each 1.2 centimeters wide and 0.8 centimeters thick, and a tension rod with a diameter of 1.6 centimeters, which is almost invisible from a distance. As approaching, a 6-storyis5 centimeters square glued wood constructed overhanging beam extends 2.46meters, and single-point twisted steel column and limiting rotation rod form an involuntary concern for the structure hanging above. The rod is finally connected to a 40cmhigh concrete pillar and the entire thick solid wood plate it supports, completely attracting the user's attention to the dramatic and interesting tension presented by the material and structure.

Figure 8 Station Under Bridge (Source: China Pavilion at the 18th Venice Biennale of Architecture)

Figure 9 309 Yongjia Road Pocket Park (Source: China Pavilion at the 18th Venice Biennale of Architecture)

By weakening visual stimulation and emphasizing the interaction between the body and space, urban renewal makes the experience of space more intense. When space can fully mobilize people's hearing, touch, and even smell, the city changes from readability to experienceability[15]. By resolving the scale, people have a third position to experience the bustling atmosphere and the intimate domain in the original interstice. In other words, the criteria for evaluating urban renewal are no longer the universal goodness or badness of appearance or utility, but should rise from perception to awareness, creating a local and experiential livability.

6. CONCLUSION: THE "LOCAL RESISTANCE" OF ARCHITECTURE

The architectural style and culture of Shanghai and proposed that Shanghai's interstice position in terms of geography and culture makes this city have the character of seeking fitting, diverse forms, and meticulous design, which essentially comes from an understanding and respect for the environment and life. Shanghai may not have material wealth, but it is a land of talent. The true element that creates the Haipai Wenhua is people, who have gathered in Shanghai through the riverways since the 11th century, continuously shaping and extending the character of this city [3]. Despite the fact that Shanghai's current appearance has become a typical case of the clone town syndrome under the promotion of two advanced technologies such as cars and real estate, there are still unique character in interstices. Today, the urban renewal of Shanghai also focuses on people again, using technologies with human face to stimulate people's senses and put people back at the center of space design. Utilizing the interstitial spaces inherited from the Jiangnan Shuixiang, creating an garden-like spatial experience has become an effective way for Shanghai architects to counter the "universal civilization" and highlight the Shanghai style culture in urban space.

More importantly, the points, lines, and surfaces in the urban renewal of Shanghai show us that the "imperfections" formed by local differences have given the city resistance and vitality. Whether in the past or the present, these spaces where urban renewal has occurred are part of the legacy left behind by the shaping of the human living environment by "advanced technology". These spaces are not very "useful", "efficient", or "necessary", and they need to be "optimized". However, this optimization process does not necessarily mean making them "advanced", nor is it about erasing the "special nature" they possess. After each wave of technological surge, these special interstices should not be seen as negative parts, but rather as valuable heritage left by the past for the present and the future.

NOTES AND REFERENCES

1. Paul Ricœur, *History and Truth, Northwestern University Studies in Phenomenology and Existential Philosophy* (Evanston, Ill: Northwestern Univ. Press, 2007).
2. Kenneth Frampton, "Towards a Critical Regionalism：Six Points for an Architecture of Resistance", in *The Anti-Aesthetic* (Port Townsend，Washington，USA: Bay Press, 1983), 16–30.
3. Joseph Rykwert, *The Idea of a Town: The Anthropology of Urban Form in Rome, Italy and the Ancient World*, Faber Finds (London: Faber and Faber, 2010).
4. LUO Xiaowei 罗小未, Shanghai Jianzhu Fengge Yu Shanghai Wenhua 上海建筑风格与上海文化, *Jianzhu Xuebao 建筑学报*, 10 (1989): 7–13.

5. Frampton, "Towards a Critical Regionalism：Six Points for an Architecture of Resistance".

6. E. F. Schumacher and Bill McKibben, *Small is beautiful: economics as if people mattered*, First Harper Perennial edition (New York, N.Y: Harper Perennial, 2010).

7. Jiang Jiawei 江嘉玮, Yi Renxinghua De Jichusheshi Chongshu Chengshi Dibiao Yuedu Baixi Gongyuan 以人性化的基础设施重塑城市地表 阅读百禧公园, *Shidai Jianzhu 时代建筑*, 2 (2022): 86–93.

8. Mo Wanli 莫万莉, Bianyuan Zhong De Jiben Yuanshu 边园中的基本元素, *Shidai Jianzhu 时代建筑*, 3 (2020): 100–107.

9. Zhu Lin 朱琳, Yi Yuanlin Jieru Chengshi Cong Yuanlin Shijiao Jiedu Shanghai Changli Yuan De Shiyingxing Gengxing Chelve 以园林介入城市 从园林视角解读上海昌里园的适应性更新策略, *Shidai Jianzhu 时代建筑*, 2 (2022): 102–9.

10. Ruan Xing 阮昕, Yingsheng Chushi Yu Xiuci Chengzhang Zuowei Xintongshi De Sheji Siwei“营生处事”与“修词成章”——作为新通识的“设计思维”, *Shanghai Jiao Tong Daxue Xuebao 上海交通大学学报(哲学社会科学版)* 31, 4 (2023): 41–50.

11. Yi-fu Tuan, *Topophilia: a study of environmental perception, attitudes, and values*, Morningside ed (New York: Columbia University Press, 1990).

12. David Bruce Brownlee et.al, eds, *Louis I. Kahn: In the Realm of Architecture*, Reprinted (Exhibition Louis I. Kahn, In the Realm of Architecture, New York: Rizzoli [u.a.], 2005).

13. Zhang Bin 张斌, Cong Richang Dao Jinji Shuzhouhe Wuninglu Qiaoxia Yizhan Sheji 从日常到紧急——苏州河武宁路桥下驿站设计, *Jianzhu Xuebao 建筑学报*, 10 (2022): 16–23.

14. Wu Hongde 吴洪德, Dengdai De Tingyuan Shanghai Yongjilu 309 Long Koudai Guangchang 等待的庭院 上海永嘉路 309 弄口袋广场, *Shidai Jianzhu 时代建筑*, 2 (2022): 94–101.

15. Ruan Xing, *Allegorical Architecture: Living Myth and Architectonics in Southern China* (University of Hawaii Press, 2006).

Traditional Dwellings and Settlements
Working Paper Series

INSIDE AND OUTSIDE THE CITY WALL: ACCEPTANCE, RESISTANCE AND COMPROMISE OF MODERNITY IN SHANGHAI'S CHINESE CITY IN THE EARLY TWENTIETH CENTURY

Huichao Luo

INSIDE AND OUTSIDE THE CITY WALL: ACCEPTANCE, RESISTANCE AND COMPROMISE OF MODERNITY IN SHANGHAI'S CHINESE CITY IN THE EARLY TWENTIETH CENTURY

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This paper examines how the spatial boundary around the Western Gate—where Shanghai's Chinese City and the French Concession met—became a site of architectural, social, and cultural negotiation in the early twentieth century. As the demolition of the city wall gave way to new roads and institutional linkages, the area did not merely witness urban integration, but instead materialized contested visions of modernity. Through spatial analysis and archival research, this study investigates how contrasting governance regimes and planning logics on either side of the boundary produced divergent dwelling patterns, built forms, and ways of living. While the French Concession imposed regulatory order and privatized spatial interactions, the Chinese City retained localized, kinship-based social life and flexible architectural typologies. In this liminal zone, the city's residents simultaneously embraced, resisted, and adapted to the pressures of modernization. The Western Gate thus emerges not simply as a historical threshold, but as an active space where modernity was negotiated, identities were reshaped, and social boundaries were redefined.

1. INTRODUCTION

The morphology of a city is never separate from the meanings it carries. Urban boundaries, in particular, are often sites of intensified spatial practices, where tensions between social, cultural, and governance structures become most visible. Modernity is far from a singular, linear narrative; it is more often negotiated, performed, and manifested in fragmented and liminal spaces at the urban margins.

In colonial urban contexts, spatial demarcation served not only as the foundation of governance but also as a mechanism for instituting building codes and establishing urban order. Shanghai during the colonial period presents a paradigmatic case of such spatial politics. The French Concession, established north of the county walls of Shanghai, expanded for the first time in 1861 and subsequently became a long-standing source of conflict between the French authorities and the Chinese local government. These tensions went beyond administrative jurisdiction, manifesting in a series of spatial contestations and regulatory confrontations over land use, construction control, and divergent ways of urban life.

As sociologist Morris Janowitz aptly observed, "The city is a spatial expression of human social relations, particularly revealed through the delineation of zones that reflect social structures"[1]. From this perspective, internal urban boundaries are not merely physical demarcations, but spatial palimpsests shaped by overlapping institutional, cultural, and social forces. The boundary between Shanghai County and the French Concession exemplifies such a "collaged urban structure," where underlying spatial order and social symbolism were forged through conflicts of governance, institutional discrepancies, and cultural tensions.

Scholar Lu emphasizes the importance of reinterpreting Shanghai's urban character through the lens of everyday life. He argues that Shanghai is not only a representational space shaped by cosmopolitan influences, but also a site of ongoing social practice where "tradition" is actively reconstructed within a local sociocultural context[2]. In contrast to the institutionally planned and intervention-driven French Concession, Shanghai County followed a more passive trajectory in embracing modernity—evolving from a traditional Jiangnan water-town settlement, it represents an urban district that struggled to preserve its internal structure under the growing pressure of colonial urban spatial expansion.

Against this spatial backdrop, the area outside the Western Gate of Shanghai County emerged as a critical site for observing the interplay between tradition and modernity, as well as between local governance and colonial intervention. The Western Gate originally served as the westward exit of Shanghai County's city wall, beyond which lay farmland and rural settlements—constituting what was traditionally regarded as the urban periphery[3]. However, following the three expansions of the French Concession—especially the third expansion in 1914—the concession's urban territory extended significantly westward, coming into direct contact with the Western Gate area. Simultaneously, in 1912, Shanghai County demolished its city wall, triggering an intensified spatial confrontation between two contrasting urban forms that had previously been physically separated.

The Western Gate zone thus became a key interface where two distinct systems of governance directly confronted one another. Following its territorial expansion, the French Concession swiftly implemented a grid-based street network, public hygiene regulations, and a formalized building permit system. In contrast, the Shanghai County side sought to maintain spatial control through local guilds (Gong Suo 公所) and traditional rural order. Construction activities on both sides converged in this border area, making it a nexus where divergent governance models, modes of living, and spatial logics came into contact. Around 1914, the Western Gate area underwent a rapid transformation—from farmland to rural settlement to urban residential district—gradually stabilizing into a new spatial configuration.

This study addresses two core questions: First, through what mechanisms did the boundary between the French Concession and Shanghai County in the Western Gate area produce differentiated urban space and social structures? Second, how did the interaction between the concession's administrative regime and local governance shape specific architectural and neighborhood forms at the boundary? Through these inquiries, this paper seeks to demonstrate how urban boundaries became critical sites for negotiating modernity, and how spatial institutions contributed to the production of social relations through their material expressions.

2. HISTORICAL CONTEXT AND CONCEPTUAL FRAMING

The Shanghai French Concession emerged in the late nineteenth and early twentieth centuries as a prototypical modern built environment shaped by the rapid expansion of capitalist urbanism. Its urbanization process was state-led and characterized by clearly defined planning strategies. At its core was the principle of "filling canals and constructing roads" (tianhong zhulu)—a transformation that entailed the systematic infill of pre-existing water networks and the construction of new municipal roadways. This strategy gradually replaced the densely interwoven agrarian landscape of waterways with an infrastructure-cantered urban fabric. Within a few decades, the French Concession underwent a dramatic transformation from a rural water-town to a modern urban district. Its orderly spatial structure and superior residential amenities led many Western observers to regard it as one of the most liveable urban areas in China[4].

In stark contrast, Shanghai County during the same period lagged significantly behind in governance capacity, urban infrastructure development, and spatial integration. Its urban transformation relied more heavily on the self-organized initiatives of traditional local systems and grassroots forces. As a result, the evolution of urban space in Shanghai County was characterized by fragmentation, delays, and a lack of systematic planning[5].

The area outside the Western Gate (Ximen 西门) represented the traditional periphery of Shanghai County. Historical records indicate that this region was originally composed of farmland, charitable cemeteries, wastelands, and scattered rural settlements, lacking any unified urban development. Unlike the Eastern Gate area near the Huangpu River—which had long emerged as a hub of commercial vitality—the Ximen district saw no systematic urban expansion before the mid-nineteenth century. However, since the establishment of the French Concession in 1872, its territorial scope gradually extended from the northern marshlands toward the southwest. Through mechanisms such as "extra-boundary road construction," the concession progressively incorporated the rural outskirts of Shanghai County, initiating a process of rapid urbanization driven by modern planning, construction, and governance.

Meanwhile, Shanghai County sought to counter the territorial expansion of the French Concession through infrastructural initiatives such as road construction, the establishment of local administrative halls (gong suo), and a network of rural pathways. In 1905, the county founded the Urban Engineering Bureau for the Inner and Outer Walled City, aiming to integrate regional public institutions and settlements via a skeletal system composed of Zhaozhou Road, Yangweiqiao Road, and the northern rural route. However, following the French Concession's third expansion in 1914 and its spatial dominance established through rounds of negotiation and contestation, much of the bureau's construction effort was ultimately absorbed into the concession. With the demolition of the city wall and its replacement by a ring road, the physical boundary

between the French Concession and Shanghai County effectively vanished. Most of the Ximen area was subsequently incorporated into the concession, with the Chinese-administered territory reduced to a narrow strip bounded by Zhaozhou Road to the north and Fangbang Horizontal Road to the south (fig.1).

Fig. 1: Maps of the Ximen-Zhaozhou 西门-肇周 area at the French–Chinese boundary in 1911 (top) and 1917 (bottom). (Source: Commercial Press 商务印书馆, 1911; Shanghai Pictorial Press 上海画报出版社, 1917).

During this period, the French Concession rapidly established a grid-based road system (Voies Publiques) and, through the Municipal Council, implemented sanitary regulations and a building permit mechanism. By around 1925, the urban transformation of the Ximen area was largely complete[6]. These newly constructed streets, while acknowledging the preexisting diversity of land tenure, subdivided the area into urban blocks composed of numerous small private land parcels. Unlike master-planned urban districts, the Ximen area was shaped by a decentralized pattern of development in which individual landlords carried out independent construction and operated small-scale real estate projects. This process gave rise to a spatial structure characterized by fragmented ownership yet functionally cohesive block-level communities—representing a "micro-scale self-organized" development model that typifies the late-stage urban renewal practices of the French Concession in Shanghai.

From a longer historical perspective, the spatial transformation of the Ximen area reflects a logic of "multiple continuities." On one hand, the area retains deep spatial memories of Jiangnan's traditional water-town landscapes, kinship-based settlements, and agrarian culture; on the other hand, its location at the administrative and cultural margin rendered it a frontline of governance clashes, architectural transformation, and lifestyle reconfiguration. Due to both its geographical connectivity and its institutional interstitiality, the Ximen block became a site of experimentation for spatial sovereignty and urban order-making, jointly contested by the French Concession and Shanghai County authorities.

This study focuses on the period between 1911 and 1925—a critical historical juncture between the third expansion of the French Concession and the demolition of Shanghai County's city wall, culminating in the completion of initial urban construction in the Ximen area. It aims to examine the concurrent transformation of spatial morphology and social structure within this boundary zone.

To this end, the study adopts architect and environmental psychologist Amos Rapoport's typology of boundaries as an analytical framework. Rapoport distinguishes three types of boundaries: definitive boundaries, physical boundaries, and social boundaries[7]. While the first two relate to the ways in which space shapes or constrains human behavior, the third emphasizes how social relationships and patterns of interaction are constructed and maintained through space. When these three boundary types align, they tend to foster spatial stability and social cohesion; when they diverge or become decoupled, they often give rise to spatial tensions and social fragmentation.

By empirically examining the French-Chinese boundary in the Ximen area, this study seeks to reveal how these three dimensions of the boundary are manifested in urban practice and how they influence spatial perception, dwelling forms, and everyday social relations. It argues that the overlapping or disjuncture of boundaries constitutes not only the institutional foundation for urban spatial evolution but also the micro-

scale dynamics through which urban societies negotiate modernity.

3. METHODS AND SOURCES

This study employs a combined methodology of historical document analysis and urban morphological investigation, aiming to reconstruct the spatial evolution of the Ximen boundary area at a micro scale. It seeks to reveal the transformation logic of architectural typologies and dwelling patterns within the overlapping processes of institutional negotiation and cultural reconfiguration. Through a systematic examination of archival records and cadastral documentation, the research focuses on the formal characteristics and usage patterns of residential space during a specific historical period, thereby uncovering the social significance and spatial mechanisms underlying the urbanization of the boundary zone.

The core sources for this study include cadastral maps, historical cartography, property title deeds (道契), annual municipal reports of the French Municipal Council, and contemporary commercial and social reports. Among these, cadastral atlases and title deeds constitute the study's most critical archival materials. The title deeds, issued by the Shanghai authorities to foreign nationals since the city's opening in 1842, record detailed information on parcel boundaries, rental rates, transaction histories, and often include accompanying site diagrams and annotations on surrounding natural or cultural features[8]. These documents serve as vital resources for reconstructing the pre-urban spatial fabric and land-use configurations. The cadastral atlases, compiled by the French Concession's cadastral office, provide systematic documentation of parcel numbering, size, taxation value, and the corresponding title deed references—making them essential technical tools for aligning historical texts with spatial locations.

The cartographic base of this study is drawn primarily from two historical maps: the *Measured Map of Shanghai County and the Foreign Concessions* 实测上海城厢租界图(1910), published by the Commercial Press 商务印书馆, and the *Map of the French Concession in Shanghai* 上海法国租界分图(1917), produced by the Shanghai Pictorial Press 上海画报出版社. These maps offer not only detailed representations of street networks and parcel subdivisions but also serve as precise spatial references for tracing the diachronic transformation of urban morphology.

In terms of analytical approach, this study draws upon methodological frameworks from contemporary urban morphology, particularly focusing on comparative analysis of formal elements, identification of typological relationships, and diachronic morphological evolution. Special attention is given to four key spatial elements—street systems, land parcel division, architectural texture, and open space. By comparing residential

typologies on both sides of the boundary during the same historical period, the study reveals how governance systems, property structures, and cultural contexts are spatially projected and differentiated.

Geographically, the case study focuses on the area bounded by Pishaonai Road（皮少耐路）, Zhaozhou Road（肇周路）, and Wanshengqiao Road（万生桥路）, hereafter referred to as the Ximen-Zhaozhou block. This area is bisected by Fangbang Bridge Road（方浜桥路）, forming the north-south boundary: the northern portion fell under the jurisdiction of the French Concession, while the southern portion remained governed by Shanghai County. Situated precisely at the interface of the French Concession's third expansion in 1914 and the county-controlled area, this region became a critical site where urbanized territory and traditional territorial logic directly confronted one another. It includes both rapidly developed neighborhoods under the concession's planning system and slower-developing traditional settlements governed by the Chinese administration (huajie), making it a quintessential case of boundary-induced spatial hybridity.

By tracing the transformation of residential forms, land use patterns, and population density within the Ximen-Zhaozhou block, the study not only unpacks the dynamic mechanisms shaping urban boundaries between the French Concession and Shanghai County, but also examines how institutional regimes, cultural codes, and social practices were inscribed into the built environment.

It must be emphasized that although the spatiotemporal scope of this study appears to center on the colonial urban boundary between the French Concession and Shanghai County, its conceptual emphasis lies in theorizing the boundary as a socio-spatial construct at the intersection of architectural studies and urban sociology. Using the historical case of the Ximen area, this paper argues that urban boundaries are not merely geographical interfaces, but loci where institutional logic, social structure, and spatial perception converge. Their formation processes reflect the continual negotiation of modernity, governance, and modes of everyday life.

4. ARCHITECTURE AND THE SPATIAL PRODUCTION OF THE BOUNDARY

When comparing the spatial relationships between old Chinese city cores and colonial concessions in various cities of modern China, Shanghai exhibits a particularly distinctive pattern. Unlike many other cities where concessions were typically separated from traditional urban areas by buffer zones or explicit physical barriers, the Shanghai County and the French Concession were situated in immediate spatial proximity[9]. For a long time, their boundary was demarcated only by a section of the old city wall, with little to no transitional zone between them. In 1914, the Shanghai County administration initiated the demolition of this wall, effectively eliminating the physical division between the two jurisdictions. The former defensive structure was replaced

by a ring road constructed along the old wall's trajectory. This transformation signified a critical shift in the nature of the boundary—from a physical barrier to an institutional and symbolic delineation. The border between the French Concession and Shanghai County thus ceased to function as a mechanism for physical exclusion and instead assumed the role of a symbolic interface, whose urban significance lay more in its institutional demarcation and representational meaning than in any practical restriction on mobility or land development.

The area incorporated into the expanded French Concession was originally part of the Jiangnan riverine landscape, characterized by a dense network of waterways and closely spaced but small-scale settlements. Residents in this region lived in clan-based communities, engaged in both agriculture and artisanal production. The land parcels were fragmented and functionally mixed, with open spatial configurations and flexible organization, producing a spatial ecology marked by strong local identity and embedded traditional structures. One illustrative example is Tangjiawan (唐家湾), a village located just outside the Ximen (西门) gate. The settlement was encircled by water, laid out in a compact manner, with dwellings neatly arranged across an area of approximately ten mu (about 6,600 square meters), and connected to the surrounding areas via stone bridges. The village featured orderly riverside docks and mooring stones, with a shared drying field on its southern edge. This configuration presented a quintessential Jiangnan water-town morphology, characterized by the interweaving of land and water, compact settlement structure, and multifunctional spatial practices that included agricultural production, transport connectivity, and religious activity. It exemplified the hybrid nature of rural-urban space at the city's margins.

The transformation of such traditional water-town settlements into urban built-up areas was driven by the forces of industrialization, colonial governance, and capitalist expansion that intensified during the second half of the 19th century. This process was catalyzed by spatio-temporal compression and changing demands for land use. Internally, the transition involved (1) increased land-use density and intensified spatial subdivision; (2) the functional redefinition of traditional settlements from mono-functional residential spaces to complex sites of production, commerce, and civic organization; and (3) the partial retention and adaptive transformation of local social structures under urbanizing pressures. These gradual shifts ultimately facilitated a structural synthesis of tradition and modernity within the emerging urban form.

In its institutionally driven urban development process, the French Concession deliberately rejected the traditional Jiangnan model of organic urban growth—characterized by incremental densification along waterways—and instead adopted a spatial strategy based on the "axis + grid" paradigm. Through land expropriation and systematic road construction, the concession achieved rapid territorial expansion while enforcing institutionalized spatial control. The street network was organized around a primary axial spine

formed by Gongguan Road (公馆路), Xiafei Road (霞飞路), and Beidang Road (贝当路). Based on this axis, a rigorous grid of urban blocks was implemented. Concurrently, a range of public amenities—including hospitals, schools, parks, and administrative institutions—were strategically established to meet the growing demands of public life, thus facilitating not only the spatial expansion of the city but also the reconstruction of social order[10].

However, the internal social structure and spatial organization of the French Concession were far from homogeneous. Under the influence of capitalist development, the concession exhibited a pronounced spatial and social bifurcation. The western sector of the concession was characterized by low-density development, lush greenery, and detached garden residences or high-rise apartments—representing the residential ideals of the expatriate upper-middle class. In contrast, the eastern section, especially the Ximen district adjacent to Shanghai Count, developed into a densely populated, functionally mixed urban fabric. This area was marked by relatively lower land prices, highly fragmented property ownership, and insufficient public amenities. The contrast between these two areas underscores how urban boundaries serve not only as geographical interfaces but also as intersections of institutional logic, lifestyle regimes, and social stratification.

Following the third expansion of the concession in 1914, the French authorities promptly implemented a grid-based street plan known as Voies Publiques, which acknowledged the region's historically diverse land ownership structure. Within this framework, numerous small-scale urban blocks emerged under the control of private landlords. The longtang 弄堂 system rapidly developed, giving rise to what may be termed a spatial structure of micro-property communities. Through individual construction applications—submitted in both graphical and textual forms—these blocks underwent a gradual transformation from agricultural plots to fully urbanized neighborhoods.

The French Concession also introduced a specialized lexicon of urban governance to regulate everyday life and spatial order within these street blocks. This included a tripartite street hierarchy system[11]:

1. Chemins Publics (Public pathway): Semi-formal public paths not owned by individuals, serving as secondary circulation routes in addition to the main municipal roads;

2. Chemins Municipaux (Municipal lanes): Institutionalized internal alleys established by the Municipal Council to integrate and manage older rural settlements, functioning as controlled communal space within street blocks;

3. Servitude (Easement pathways): Shared pathways demarcated between private lots through servitude rights, intended to secure access and ensure building setbacks—legal constructs with strong regulatory implications.

These spatial and legal mechanisms represented more than just a redistribution of urban resources; they were concrete manifestations of governance power at the architectural scale. By institutionalizing circulation across privately owned plots, the French Concession effectively restructured and regulated traditional rural spatial practices, embedding modern spatial control within everyday life.

In the course of spatial governance, disputes frequently arose between landowners over the erection of iron fences that obstructed shared passageways. These alleyways, originally intended for mutual neighborhood access, became the subject of formal complaints when one party installed physical barriers. In such cases, the French Municipal Council would rule the obstructions as violations and order their timely removal[12].This type of incident reveals that the French Concession not only regulated spatial usage through legal instruments but also operated through a tripartite mechanism integrating physical boundaries, legal boundaries, and social boundaries. In this system, architectural boundaries were transformed into symbolic extensions of governance. The authority to define boundaries, originally in the hands of private landowners, became subject to public regulation. Shared pathways were thus converted from informal communal spaces into institutionalized public zones, reflecting the complexity of urban boundaries as simultaneous interfaces of governance, social practice, and spatial morphology.

5. GOVERNANCE AND EVERYDAY REGULATION OF SPACE

The Ximen–Zhaozhou (西门–肇周) block, a representative "urban–rural interface" in modern Shanghai, illustrates how institutional governance actively shaped the social structure and everyday spatial order of boundary zones. Originally located beyond the city walls of Shanghai County and characterized by rural settlements and agricultural landscapes, this area underwent a significant transformation in the early 20th century. With the intervention of French Concession planning and development, it was gradually converted from a traditional agrarian village cluster into a high-density urban neighborhood. During this transition, indigenous structures such as lineage organizations, charitable cemeteries, and local community networks were embedded within a new urban framework and reconfigured into functional units of modern urban governance under the Concession system.

Within the jurisdiction of the French Concession, a systematic road-building initiative and parcel-level development produced a prototypical "street–lane" (jie–nong 街–衖) composite transportation network. This resulted in a three-tier, six-level spatial hierarchy consisting of municipal roads, neighborhood lanes, and intra-parcel pathways[13]. Such a spatial stratification not only enhanced accessibility and organizational efficiency across the block, but also facilitated the coexistence of built forms under different ownership models. The hybrid public-private property regime reflected the flexibility and adaptive governance

characteristic of the French Concession's urban management, allowing for both state control and private initiative within a negotiated spatial order.

Although the urban fabric of the French Concession underwent a comprehensive reconstruction, elements of the original topography and rural pathway systems were selectively retained. This continuity reveals the Concession's partial spatial compromise with pre-existing land-use patterns, reflecting a degree of negotiated adaptation between modern urban planning and traditional spatial logic[14]. One prominent example is the present-day Fangbangqiao Road (方浜桥路), which was constructed over the former Fangbang Creek (方浜河). Its irregular alignment serves as a physical trace of the transition from Jiangnan water-town morphology to grid-based urban infrastructure. These historically embedded spatial textures exemplify a "hybrid weaving" of old and new spatial regimes, embodying not only morphological pluralism but also the embedded tensions and negotiations between competing systems of governance and territorial strategy.

The institutional nature of the boundary was also manifest in the regulation of everyday movement. At key junctions adjoining the Chinese-administered area, the French Concession installed iron gates and inspection checkpoints. While these remained open during peacetime, they transformed into heavily controlled security barriers during periods of conflict. Historical accounts describe scenes where residents of the Concession would throw food and daily necessities over the gates to assist those barred from entry. Such moments poignantly illustrate the boundary's dual role as both exclusionary mechanism and protective shield, turning spatial governance into a lived experience of social stratification and differential access to urban safety.

At the level of land governance, the development practices of the French Concession were rooted in a continuity with traditional rural parcel structures, emphasizing both the legitimacy of private ownership and the freedom of land development. Rather than imposing a comprehensive master plan on all plots, the Concession authorities adopted a flexible approach that encouraged development through mechanisms such as subdivision (分地), land amalgamation (拼地), re-subdivision (再分地), and neighboring lot collaboration—all while respecting pre-existing property rights[15]. This approach led to extreme parcel fragmentation and a highly complex property regime. However, it also enabled a remarkable diversity in land use and dwelling forms, shaping a mosaic-like urban fabric characterized by layered spatial practices and heterogeneous social formations.

In the Shanghai County jurisdiction of the Ximen–Zhaozhou block, the advance of urbanization did not entirely erase the spatial residues of rural social structures. The internal layout of the block retained its pre-urban organic road system, creating a network that diverged from and intersected with the rationalized street grid of the French Concession. A particularly illustrative example is Fangbangqiao Road, which originally

functioned as a natural watercourse before being filled in and converted into a road in 1912. While the physical form of the road was modernized, its alignment and boundary characteristics continued to follow the spatial logic of the traditional Jiangnan water-town landscape. As such, it emerged as a critical interface and transitional zone between the grid-based planning of the French Concession and the organically evolved alleyway system of Shanghai County.

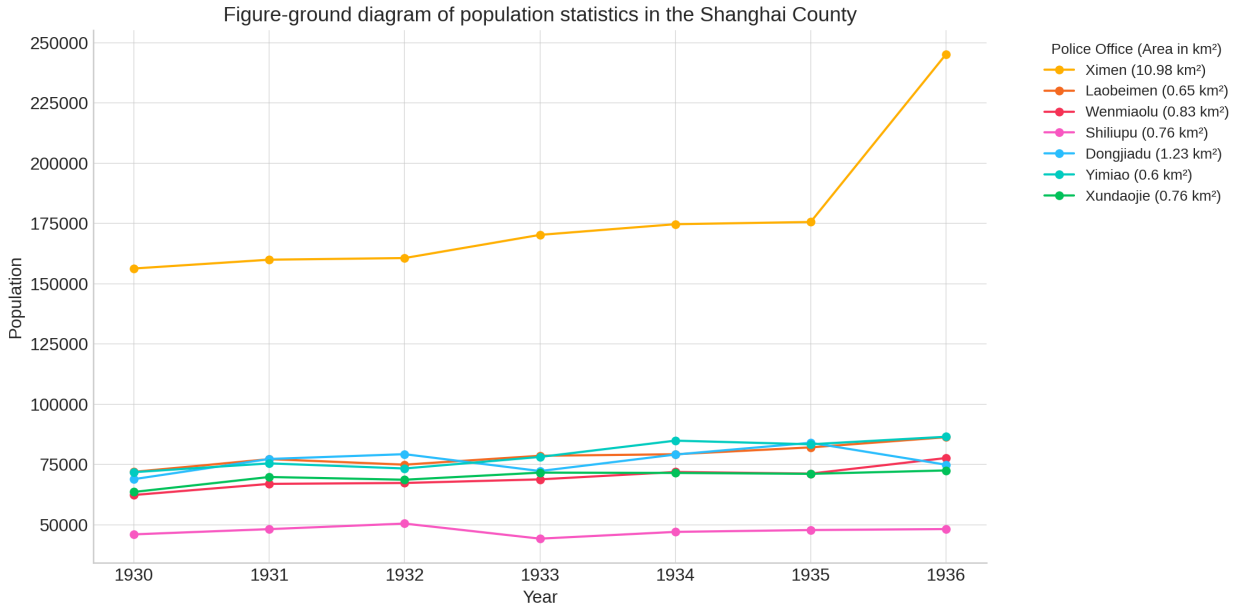

Table 1: Figure-ground diagram of population statistics in the Shanghai County, 1930–1936. (Draw by Author, Source: Zou Yiren 邹依仁, A Study on Population Change in Old Shanghai 旧上海人口变迁的研究).

From the perspective of population distribution and urban density, the period from 1930 to 1936 reveals a clear spatial differentiation among the police jurisdictions within Shanghai County (see Table 1). Among these, the Ximen Police Office stood out as the district with both the largest administrative area (10.98 km²) and the most significant population growth. Its population increased from 156,297 in 1930 to 245,172 in 1936, marking a 57% increase, far surpassing other districts. This sharp rise indicates that the Ximen area was at the forefront of rapid urbanization and population absorption during this period.

Although Ximen had the highest total population, its population density in 1936 was approximately 22,324 persons per square kilometer, which, relative to its area, did not make it the most densely populated district. However, this condition of "high total population but moderate density" underscores Ximen's transitional status—from a low-density rural zone to a high-density urban district. This dual character of expansion and regulation exemplifies the spatial dynamics typical of urban boundary zones, where rapid transformation coexists with structural negotiation between urban and peri-urban forms.

In summary, the Ximen block in modern Shanghai's spatial governance exhibited multiple characteristics. First, it developed a nested governance structure composed of multi-tiered spatial units—street, lane, and alley—that closely integrated institutional logic with everyday life practices. Second, it embodied a "hybrid urban fabric" by combining remnants of the Jiangnan water-town morphology with a modern street grid, resulting in a spatial system that is both historically rooted and functionally adaptive. Third, the boundary space served not only as a symbolic demarcation of governance but also as a key interface for social integration and resource circulation. Fourth, by absorbing rapid population growth at a moderate density, the area effectively functioned as a buffer zone that mediated between the old city and new urban extensions. As previously noted, the boundary is never a mere geographic line, but rather a dynamic system that manifests through institutional configurations, social structures, and lived experience. The governance practices in the Ximen–Zhaozhou block reveal not only the spatial organizing power of institutional frameworks but also the critical role of the boundary as a regulatory mechanism in Shanghai's urban transformation.

6. LIVING ACROSS THE BOUNDARY: DWELLING FORMS AND SOCIAL PRACTICES

Between the late 19th and early 20th centuries, as Shanghai underwent rapid urbanization, a large number of trade-based social organizations—known as professional guilds—emerged as critical intermediaries linking traditional regional associations with the evolving modern urban society. In contrast to the conventional *gongsuo* (公所) system, which relied on territorial and kinship networks, these guilds adopted more flexible and diversified organizational forms. They no longer emphasized ownership of dedicated premises or locations in the city center; instead, they adapted to the trend of spatial marginalization by relocating to areas with lower land costs and convenient access. Benefiting from proximity to the French Concession, affordable land, and an increasingly well-developed transportation network, the Ximen–Zhaozhou block, situated along the urban boundary, gradually became a major cluster for both trade guilds and regional associations.

The Jingjiang Gongsuo (京江公所), located within the jurisdiction of Shanghai County, serves as a prime example of this spatial shift. Established in 1869 at the intersection of Fangbangqiao Road (方浜桥路) and Zhaozhou Road (肇周路), the site was formerly occupied by the Tongren Fuyuantang cemetery, used for burying victims of wartime unrest. After its relocation, the gongsuo not only continued the charitable and ritual functions of the site but also founded a school, initially organized by regional associations and later managed by trade guilds. This transformation highlights how urban edge zones became key arenas for the restructuring of social functions and the transition of institutional forms during Shanghai's modernization[16].

With the rise of the market economy and the continuous increase in land values, the Jingjiang Gongsuo (京江公所) transformed part of its landholding into profitable real estate developments, including the construction of Shikumen-style lilong housing such as Dunrenli (敦仁里), while retaining a small portion of land for its original association functions. This spatial strategy marked a clear transition from traditional associational roles to modern urban development logic, exemplifying the institutional restructuring of urban edge zones. As a quintessential housing typology in modern Shanghai, lilong housing combined traditional Chinese spatial layouts with Western architectural elements and emerged in the context of Sino-foreign cohabitation and speculative real estate markets. Compared to the large-scale residential developments within the concessions, the growth of lilong housing in Shanghai County was relatively slow due to lower return expectations and the complexity of urban morphology. However, Dunrenli, along with Mianyangli (棉阳里), Jixiangli (吉祥里), and other early lilong developments near the commercial core, demonstrates the experimental and hybrid nature of urban form along the boundary zone.

As an organizational system, the urban boundary not only functions as a spatial delimiter but also structures both the historical continuity and contemporary configuration of the city. Within the Ximen–Zhaozhou (西门–肇周) block under the administration of the French Concession, the boundary materialized as a new social relational network and institutional spatial order. The area exhibits a coexistence of multiple building typologies—mansions, traditional courtyard houses, and new lilong housing—reflecting a hybrid layering of "originally built spaces" and "redeveloped structures" within the same urban parcel. The spatial layout typically follows a clear hierarchy between primary and secondary spaces, highlighting the dynamic tension between traditional domestic architecture and modern real estate-driven urban form.

Although the traditional social structures of Jiangnan rural society were gradually dismantled during urban expansion, their residual influence remains observable through the continued presence of architectural forms and spatial configurations in the Ximen–Zhaozhou area of the French Concession. Shikumen lilong compounds such as Shoukangli (寿康里), Chunxingli (春兴里), Yukangli (余康里), Rongdeli (荣得里), Shandeli (善德里), Xinli (新里), and Yinheli (银河里) were developed using long and narrow plots, subdivided into regular row housing units. This pattern significantly increased land use efficiency and represented the rationalized spatial strategy of capital-driven urban development. The façade designs of these lilong houses displayed a pronounced dual coding: facing outward, they adopted Western stylistic elements to reflect aspirations of modern urban identity, while inwardly, traditional Chinese motifs and spatial organization persisted, signifying the residents' attachment to cultural and ethical norms. This "double-

coded" architectural expression reflects the symbolic mediation of urban boundaries through form and aesthetics, illustrating how built space negotiates between cultural expression and identity construction.

Changes in dwelling forms mirrored broader urban social transformations. As waves of migration intensified, household structures shifted toward nuclear families, and occupations diversified, traditional neighborhood structures based on kinship and locality gradually dissolved. Housing demand became increasingly differentiated—not by native or non-native status, but by occupation, income, and lifestyle. The emergence of new lilong housing in the Ximen area responded to this shift, with layouts tailored to small families or even single individuals, becoming the primary housing option for Shanghai's urban middle class and mobile populations.

In sum, the Ximen–Zhaozhou block, situated at the urban boundary between the French Concession and Shanghai County, presents a residential morphology characterized by hybridity and transitionality. On the one hand, the area disrupts binary oppositions between traditional and modern by spatially juxtaposing ancestral homes, public facilities, and newly developed lilong units, thus illustrating the gradual transformation from rural settlement to urban block. On the other hand, the land tenure system and building practices reflect a layered institutional logic, wherein traditional regional associations evolved into real estate operators, and community-held land transitioned into commodified housing—marking a shift from ethical to economic spatial production. At the cultural level, these boundary-zone buildings combined Western urban façades with Chinese domestic interiors, creating an "inside-outside" spatial order that embodied both symbolic modernity and persistent local identity. This duality captures the tensions and negotiations involved in constructing identity, space, and social structure in the boundary zone. As such, the residential space in this area functions not merely as a site of physical transition but as a mediator of institutional governance, cultural articulation, and social restructuring in the broader urbanization process.

7. CONCLUSION

The Ximen–Zhaozhou block in Shanghai illustrates the urban boundary as a critical interface where cosmopolitanism and tradition intersect. Here, modern planning ideals from the French Concession interacted with vernacular structures from Shanghai County, producing a layered and hybrid urban form. The boundary functioned not merely as a line of division, but as a dynamic site of institutional, cultural, and spatial negotiation.

Traditional organizations, such as native-place associations, were restructured to meet the demands of an urbanizing society, demonstrating the adaptability of tradition within modern frameworks. Meanwhile,

dwelling forms like lilong housing embodied both Chinese and Western elements, reflecting residents' negotiation between global modernity and local identity.

This case highlights how urban boundaries can serve as mediating spaces for institutional transition, cultural hybridity, and social translation—offering a valuable perspective for understanding how cities in the Global South reconcile modernity and tradition.

NOTES AND REFERENCES

1. Janowitz, Morris. "Introduction." In *The City: Suggestions for Investigation of Human Behavior in the Urban Environment*, by Robert E. Park, Ernest W. Burgess, and Roderick D. McKenzie, p.10. Chicago: University of Chicago Press, 1984. Originally published 1925.
2. Lu, Hanchao. "Away from Nanking Road: Small Stores and Neighborhood Life in Modern Shanghai." *The Journal of Asian Studies* 54, no. 1 (1995): 93–123. https://doi.org/10.2307/2058952.
3. 牟振宇. '近代上海法租界城市化空间过程研究（1849-1930）'. 博士学位论文, 复旦大学, 2010. https://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CDFD&dbname=CDFD0911&filename=2010194316.nh.
4. 何益忠. '从中心到边缘'. 博士, 复旦大学, 2007.
5. Du, Zhengzhen 杜正贞, "上海城墙的兴废:一个功能与象征的表达," *Historical Research 历史研究,* no. 6 (2004): 92–104+191.
6. Liu, Gang 刘刚, and Jiang, Yanrui 江衍睿. 'Outside the Old West Gate Street-Alley Composite Structure in Shanghai©s Post-Opium War Urban Form[西门外 上海近代城市形态中的街-衖复合结构]'. *Time + Architecture 时代建筑*, no. 6 (2023): 126–31. https://doi.org/10.13717/j.cnki.ta.2023.06.126.
7. Rapoport, Amos. Toward a Redefinition of Density. *Environment and Behavior*, 7, 133-158. 1975.
8. Mou, Zhenyu 牟振宇. '上海法租界之地籍研究(1849-1943)'. *Historical Review 史林*, no. 5 (2012): 14–24, 189.
9. Huang, Zhonghao 黄中浩 A century of old Shanghai Chinese city 1843-1947 上海老城厢百年. of *"社会空间视野的上海纪事"书系* 同济大学出版社, 2020.
10. Liu, Gang 刘刚. 2009. Shanghai qian Fa Xin zujie de chengshi xingshi [Urban Form of the Former French and New Concessions in Shanghai, 上海前法新租界的城市形式]. PhD diss., Tongji University.
11. Liu, Gang 刘刚, and Jiang, Yanrui 江衍睿. 'Outside the Old West Gate Street-Alley Composite Structure in Shanghai©s Post-Opium War Urban Form[西门外 上海近代城市形态中的街-衖复合结构]'. *Time + Architecture 时代建筑*, no. 6 (2023): 126–31. https://doi.org/10.13717/j.cnki.ta.2023.06.126.
12. Shanghai Municipal Council. 1936. 上海法租界公董局公共工程处关于华格臬路私人违章建筑的文件 [Documents from the Works Department of the Shanghai French Concession Municipal Council on Illegal Private Constructions on Huaguonie Road]. 上海档案馆 (Shanghai Archives), U38-4-1822, pp. 14, 19.

13. Liu, Gang 刘刚, and Jiang, Yanrui 江衍睿. 'Outside the Old West Gate Street-Alley Composite Structure in Shanghai©s Post-Opium War Urban Form[西门外 上海近代城市形态中的街-衖复合结构]'. *Time + Architecture 时代建筑*, no. 6 (2023): 126–31. https://doi.org/10.13717/j.cnki.ta.2023.06.126.

14. Liu, Gang 刘刚. 2009. Shanghai qian Fa Xin zujie de chengshi xingshi [Urban Form of the Former French and New Concessions in Shanghai, 上海前法新租界的城市形式]. PhD diss., Tongji University.

15. Liu, Gang 刘刚. 2018. 'Jindai Shanghai zujie de tudi chonghua yu zizhu kaifa [Land Readjustment and Self-Directed Development in Modern Shanghai's Concessions 近代上海租界的土地重划与自主开发]'. 时代建筑, no. 6 (2018): 126–30. https://doi.org/10.13717/j.cnki.ta.2018.06.021.

16. Xie, Junmei 谢俊美. "清代上海会馆公所述略" ["An Outline of Guild Halls in Shanghai during the Qing Dynasty"]. 华东师范大学学报（哲学社会科学版） [Journal of East China Normal University (Philosophy and Social Sciences Edition)], no. 2 (2000): 36–41, 48. https://doi.org/10.16382/j.cnki.1000-5579.2000.02.006.

Traditional Dwellings and Settlements
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HABITAT RECONFIGURATIONS IN URBAN VILLAGES: SELF-CARE RESPONSES TO COSMOPOLITAN BURNOUT

Goran Ivo Marinovic

HABITAT RECONFIGURATIONS IN URBAN VILLAGES: SELF-CARE RESPONSES TO COSMOPOLITAN BURNOUT

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This study examines how urban villages—semi-informal neighborhoods within cities—function as sites of self-care for working migrants experiencing burnout. The research demonstrates how residents transform liminal dwellings (units lacking formal permits or architectural plans) through decades of modifications to support their self-esteem and self-actualization. Using qualitative methods including observation, interviews, questionnaires, and informal conversations, the study analyses housing adaptations and self-care practices in two Chinese informal districts: Guquanlu (Shanghai) and Xiawang Village (Wenzhou). The central argument is that these spatial reconfigurations represent strategic responses to urban precarity rather than mere informality.

> *"Buildings can make us sick or keep us well. They can help us concentrate or make it impossible to get anything done. They can encourage us to burn calories or conserve them, to socialize or retreat into our shells."*
>
> *Emily Anthes*[1].

1. INTRODUCTION

While scholars often characterize Chinese megacities as "slum-free"[2] in contrast to counterparts like Mumbai and Rio de Janeiro, China has developed extensive "urban villages" (*chengzhongcun*)[3] that reveal a dual rural-urban residential system. These villages-in-the-city[4] represent distinct spatial arrangements on rural land within the Chinese urban fabric, providing affordable housing to urban migrants.[5] Research indicates that these informal neighborhoods constitute over 30 percent of the total housing stock, creating informal market flows where an increasing number of low-income groups have purchased informal housing in Chinese cities over time.[6] Though existing scholarship has examined low-income groups' ownership of dwellings in urban liminalities, the author argues that the migrants' decades of informal habitat reconfigurations in Wenzhou and Shanghai support their self-esteem and self-actualization as a communal tool for preventing and overpowering burnouts.

I argue that migrants' housing transformations directly correlate with their self-care practices, ultimately influencing their self-esteem and self-actualization within these liminal urban spaces. Everyday threats to well-being—stemming from high-stress circumstances, self-disciplinary requirements, and project-oriented household management—result in "burnout," "compassion fatigue," and a self-constructed false sense of freedom.[7] Rather than proposing upgrading measures for informal neighborhoods or diagnosing communal, social, and individual issues for remediation, this study employs a cosmopolitan framework of burnout as a lens for understanding how self-care manifests through dwelling transformations.

Burnout, conceptualized here as a social disorder caused by overproduction, performance expectations, and continuous communication, results in exhaustion, fatigue, and suffocation that can culminate in inaccessible depression.[8] Migrants experience a fundamental dichotomy: being caught between landlords' expectations to preserve rented properties and their own household's struggle for survival, creating perpetual postponements of gratification and belonging. How do migrants overcome symptoms of exhaustion, compassion fatigue, and hyper-passivity while navigating self-care imperatives? Self-care in this context encompasses both "taking care of oneself" and engaging in activities that "maintain, continue, and repair our 'world' so that we can live in it as well as possible."[9] The care practices examined are embedded in migrants' housing environments and their responsibilities toward family members.

The study hypothesizes that migrants' housing expansions and integral alterations correspond to either self-care capabilities or reveal consequences of burnout manifested through imperceptible depression. In contrast to communal organizational stressors and work overload that typically trigger burnout syndrome, some households demonstrate coping strategies through the alternation of dwellings with family members. Data collected through qualitative methods—including observation, semi-structured interviews, questionnaires, and informal conversations—establishes correlations between house transformations and self-care practices among family members. Understanding this relationship between transformations of inhabitable spaces and migrants' self-care provides valuable insights for preventing burnout syndromes. Analysis reveals households' disappointment with external envelope alterations and a consequential shift toward interior modifications.

The findings confirm, first, migrants' diminished self-esteem is fundamentally conditioned by survival imperatives, as they struggle to priorities self-care while focusing on meeting basic needs. Second, physical modifications—envelope alterations, closed-place appropriation, and the strengthening of family bonds—positively influence household satisfaction in Chinese urban villages. The research reveals that housing adaptations significantly impact migrant residents' psychological wellbeing in Chinese urban villages, where successful space modification enhances self-esteem and self-actualization, creating a psychological buffer against burnout while enabling families to maintain a sense of agency despite institutional constraints.

2. LITERATURE REVIEW

2.1. Chinese Urban Village

The rapid urbanization process in China has created a distinct spatial phenomenon where dispossessed farmers, having lost their agricultural land, repurpose unused and dilapidated structures as rental housing for migrants to secure their livelihoods.[10] This practice has given rise to urban villages—semi-informal

settlements predominantly inhabited by low-income households characterized by deteriorating physical environments, disorderly land parcellation, and social tensions between landlords and occupants. [11] Local governments, often operating from an outdated perception of these spaces as "dirty," "chaotic," "deteriorated,"[12] and incubators for criminal activity and counterfeit production, frequently initiate redevelopment projects with the stated aims of addressing urban decay, enhancing land-use efficiency, and generating revenue.[13] Such top-down planning approaches and political-cum-economic pressures significantly contribute to the symptoms of exhaustion, fatigue, and passivity experienced by migrant households.

Chinese settlements can be classified into three distinct morphological categories: urban configurations, rural structures, and urban villages—the latter representing a critical urban challenge related to informal construction practices.[14] The economic reforms of 1978 initiated a period of steady urban growth that increasingly enveloped rural villages within metropolitan boundaries. Over the past four decades, urban expansion and redevelopment has progressed at an extraordinary rate of 300%, coinciding with an increase in urban population from 17.90% to 45.70%,[15] with working migrants comprising a substantial proportion of this demographic shift. While these migrants have been spatially incorporated within the expanding urban fabric, they remain socially marginalized from mainstream urban development processes.[16]

Many structures within urban villages exhibit slum-like characteristics due to their high density and substandard housing conditions, a situation intrinsically linked to China's *hukou* household registration system that constrains access to formal housing markets. These neighborhoods typically feature brick houses interspersed with improvised shelters and vernacular dwellings. Despite physical limitations, these settlements are generally equipped with basic utilities including clean water, electricity, and some degree of law enforcement, enabling residents to contribute meaningfully to the social diversity of Chinese cities.[17]

2.2. Working Migrants in Shanghai and Wenzhou

Shanghai's population reached 24.87 million in 2021, with migrants accounting for 10.47 million individuals—constituting 42.1% of the total population.[18] Nearly half of these migrants belong to low-income demographic segments who inhabit urban villages primarily due to affordable accommodation, economic opportunities, and proximity to employment centers.[19] These informal settlements present significant challenges for policymakers, property developers, and urban planners attempting to implement growth-oriented urbanization strategies. Contrary to assertions that residents reluctantly occupy urban villages due to underdeveloped infrastructure and inadequate social and environmental amenities, this study documents dwelling alterations as evidence of migrant households' self-care practices that counteract burnout and production-oriented lifestyles prevalent in cosmopolitan metropolises.

Wenzhou, with a population of 9.22 million, has been extensively documented in academic literature with particular emphasis on its economic growth trajectories,[20] industrial upgrading initiatives,[21] and homeowner association neighborhoods.[22] Migrants constitute more than 35% of Wenzhou's population and represent a demographic majority across all three of the city's districts, with the largest proportion comprising low-income migrants residing in informal neighborhoods. Despite these significant demographics, research has insufficiently addressed urban villages' well-being. This study specifically examines informal and spontaneous housing alterations in migrant neighborhoods of Shanghai and Wenzhou, analyzing their contribution to mitigating burnout through family-centered self-care practices.

2.3. Self-Care Through Liminal Dwellings

Care functions simultaneously as both practice and value, establishing caring relations that connect individuals with their living environments and foster morally beneficial social bonds.[23] An effective caring approach necessitates adopting the perspective of those requiring care or attention, engaging with them from a moral standpoint, and viewing circumstances through their experiential framework.[24] This study conceptualizes "self-care" as an active, responsible, and adaptable process through which migrants maintain their dwellings in close collaboration with neighbors, rather than adhering strictly to housing market dynamics and formal urban planning regulations.[25]

Self-care encompasses the capacity of individuals, families, and communities to promote healthy living environments, prevent social deprivation and burnout, sustain household vitality, and address spatial challenges without professional intervention.[26] Social deprivation and burnout emerge when migrant workers experience inequity between their efforts toward dwelling alterations and the outcomes achieved through their labor.[27] This reciprocity deficit, combined with the inherent risks of renting and inhabiting urban villages—including construction overload, ambiguous communal responsibilities, and complex district political hierarchies—restricts individuals' coping mechanisms, diminishing organizational commitment and fostering depersonalization.[28] The households' burdensome obligations to maintain employment while simultaneously modifying their dwellings, coupled with extended working hours (documented at up to 16 hours daily) and communal leadership expectations regarding public space management, contribute significantly to emotional exhaustion. To address chronic exhaustion and fatigue as manifestations of cosmopolitan burnout, migrants' self-care practices necessarily incorporate elements of self-esteem and self-actualization.[29]

Self-esteem, or sense of self-worth, emerges from migrants' adaptations, relational dynamics, and ongoing family negotiations, all influenced by experiences of inhabiting informal neighborhoods. High self-esteem correlates with enhanced well-being, optimism, and emotional stability, while low self-esteem is associated

with negative psychological attributes including depression and burnout, which undermine "physical appearance, intellectual abilities, and social competence."[30] Self-actualization represents migrants' potential to flourish despite challenging living circumstances.[31] This flourishing process begins with the satisfaction of physiological necessities—air, water, food, shelter, and thermal comfort—which often requires months or years to achieve in the neighborhoods under examination. Upon establishing these basic conditions, migrants progress toward protection from social harm, developing a sense of belonging, forming romantic partnerships, cultivating friendships, and expanding social networks throughout the broader urban context.

Both self-esteem and self-actualization are intrinsically embedded in care for the living environment, establishing a positive correlation between self-esteem and housing transformations.[32] Beyond providing basic shelter, housing facilitates interaction, socialization, and expression of behavioral patterns and local traditions through its form and spatial organization.[33] The self-care behaviors observed among migrants intertwine with liminal dwellings—units constructed without predetermined urban planning permits or architectural plans—involving decades of furnishing, decoration, and collaborative improvement.[34] This represents a dynamic and processual building strategy achieved by disrupting conventional, often outdated forms of material provision, enabling families to "devise their own, bottom-up solutions" for housing needs.[35] Such housing incorporates elements from both previous and current living conditions, providing migrants with a mechanism for managing and mitigating the consequences of burnout.

3. METHODOLOGY

3.1. Research Aim and Methodological Framework

This research employs meta-ethnography as an interpretive methodology to investigate how working migrants in Chinese informal settlements develop self-care practices through dwelling modifications.[36] The primary aim is to establish a conceptual framework that translates self-esteem and self-actualization concepts[37] into measurable housing environment indicators, thereby revealing how dwelling adjustments function as manifestations of self-care within migrant households. This investigation addresses a critical gap in understanding how marginalized populations utilize limited spatial resources to maintain wellbeing in challenging urban environments.

3.2. Methodological Approach

The investigation employed a comprehensive fieldwork strategy conducted across two Chinese cities from August 2021 to August 2024. This extended timeframe enabled deep immersion in the research contexts, allowing for nuanced data collection through multiple complementary methods:

1. Focused observation of living environments in Guquanlu and Xiawang Village
2. In-depth interviews (16 in Guquanlu and 14 in Xiawang Village)
3. Structured questionnaires (24 in Guquanlu and 22 in Xiawang Village)
4. Informal conversations with residents to capture spontaneous insights

The methodological rigor was enhanced through systematic data extraction processes linking housing adaptations with burnout indicators. Both reciprocal and refutational translation techniques were employed to develop comparative analyses of self-care manifestations across different household contexts. This approach facilitated the identification of patterns between dwelling modifications and wellbeing indicators.

To ensure analytical depth, participant narratives were triangulated with researcher-generated visual documentation, field notes, and spatial diagrams. Following established meta-ethnographic principles, these multi-modal data sources were synthesized to develop an overarching analytical framework that illuminates the relationship between spatial interventions and self-care practices. The research adhered strictly to the International Communication Association's Code of Ethics, incorporating principles of non-maleficence, faithfulness, integrity, justice, and respect for human rights throughout the investigative process.[38]

3.3. Interpretation of Data

The data reveals that migrant households engage in strategic spatial adaptations as mechanisms for preserving self-esteem and pursuing self-actualization within constrained environments. The synthesized analytical theme of self-care demonstrates how residents transform standardized dwelling spaces into personalized environments that better support their psychological needs and cultural practices. These modifications represent not merely functional changes but deliberate acts of well-being maintenance in contexts where formal housing options are limited.

The interpretation of participant quotations, supported by visual documentation, reveals complex negotiations between spatial constraints and belonging. These findings challenge conventional understandings of informal settlements as merely deficient spaces, instead highlighting them as sites of agency and resilience where migrants actively construct environments conducive to wellbeing.

3.4. Research Limitations and Future Directions

This investigation focused specifically on dwelling alterations in informal settlements in Shanghai and Wenzhou, establishing a methodological foundation for future research in other coastal municipalities. The spatial analysis was intentionally bound by neighborhood parameters, setting aside broader migration patterns for subsequent studies. Additional research dimensions deferred for future investigation include:

1. The impact of resettlement and urban upgrade projects on resident burnout and self-care practices
2. Detailed analysis of families' economic profiles and their influence on spatial adaptations
3. Community organizational structures within informal settlements
4. The role of external urban actors in shaping informal housing environments
5. Evaluation of social policies and municipal strategies for migrant social inclusion

6. CASE STUDIES

This research examines two selected informal neighborhoods that house vulnerable working migrant families in major Chinese coastal cities: Guquanlu in Shanghai and Xiawang Village in Wenzhou. Both sites share the distinctive characteristic of being positioned adjacent to water bodies (Figure 1), which influences their spatial organization and development patterns. These locations were deliberately chosen as they represent archetypal informal settlements undergoing various stages of government-driven redevelopment, providing valuable comparative insights into how vulnerable populations **alter** their dwellings in response to institutional pressures.

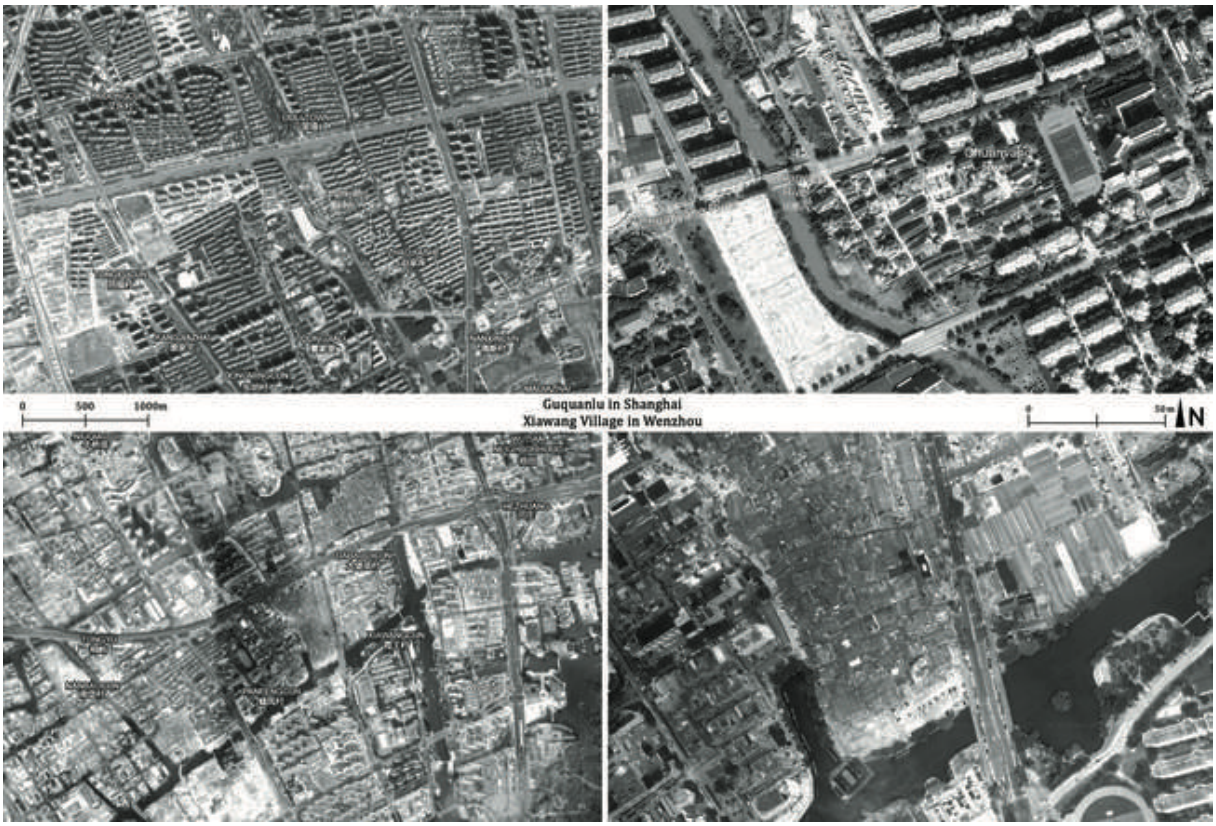

Fig. 1: Location of Guquanlu in Shanghai (up) and Xiawang Village in Wenzhou (down). (Source: Goran Ivo Marinovic, 2024).

6.1. Guquanlu (Shanghai)

Guquanlu, locally known as Nanxin Village (南新六村), is situated on Guquan Road in Shanghai's Pudong District. The site occupies a strategic location with clearly defined boundaries: the Chuanyang River to the west, educational facilities to the east, and medium-rise residential complexes to the north and south. Originally rural, this area underwent initial redevelopment in 2000, resulting in a mixed construction neighborhood comprising 190 dwellings built from various materials including wood, brick, block, and concrete.

The settlement exhibits the following key characteristics:

1. Individual dwelling sizes ranging from 47.8 to 105.5 square meters (Figure 2)
2. Total site area of 15,186 square meters
3. Built floor area of 9,852 square meters
4. Low-rise, medium-density development pattern
5. Approximately a third of green public space is distributed along the riverfront and between buildings

Guquanlu represents an important case study as it exemplifies the early redevelopment phase of Pudong District, now entering its third redevelopment iteration. Local authorities cite several justifications for planned demolition, including hazardous overhead electrical wiring, structurally compromised illegal constructions, public space encroachment by household furniture, and unregulated vehicle parking. The government's vision entails transforming this low-rise neighborhood into medium-rise housing developments, fundamentally altering its spatial and social fabric.

Fig. 2: Guquanlu neighborhood (left) & Xiawang Village (right). (Source: Goran Ivo Marinovic, 2024).

1.1. Xiawang Village (Wenzhou)

Xiawang Village is located on Jiaoyu Street adjacent to Ouhai Avenue in Wenzhou's Ouhai District. The neighborhood is bordered by a water channel to the south and west, with a fortified religious structure situated at the site's southwest corner. A distinctive feature of this settlement is its division by Jiaoyu Street into two functionally different zones: one dominated by industrial buildings with informal housing situated beneath factory roofs alongside a community center with a shrine, and the other characterized by mixed residential dwellings and small workshops.

The settlement demonstrates the following spatial characteristics:

1. Individual dwelling sizes ranging from 34.2 to 121.3 square meters (Figure 2)
2. Total site area of 22,910 square meters
3. Built floor area of 14,685 square meters
4. Low-rise, high-density development pattern
5. 23 factory buildings integrated with 280 brick, block, and concrete dwellings
6. Notable absence of designated green public spaces

Similar to Shanghai's approach, Wenzhou authorities have targeted Xiawang Village for redevelopment, citing inadequate fire safety clearances between buildings, non-compliance with vehicle parking standards, improper clothing drying practices, hazardous installation of air conditioning units, and structural deficiencies in dwellings.

1.2. Contrasting Priorities

The research reveals a fundamental tension between governmental urban development agendas and migrants' dwelling adaptation practices. While authorities focus on standardization, safety compliance, and aesthetic concerns to justify redevelopment, migrant residents engage in dwelling modifications as a form of self-care creating spaces that help mitigate exhaustion, fatigue, and psychological pressure resulting from economic constraints and demanding work conditions. This contrast between institutional and individual priorities forms a central analytical focus of the research.

2. INTERIOR ADAPTATIONS AS SELF-CARE PRACTICES

2.1. Tracing Units Expansion

Over the past two decades, migrant residents in both case studies have faced significant external constraints on their ability to modify their dwellings. These underlying spatial configurations directly influence residents'

adaptive strategies and well-being. The research reveals a consistent pattern across both neighborhoods wherein residents focus intensively on personalizing interior spaces by incorporating meaningful objects and establishing private areas hidden from street view. This inward orientation represents a strategic response to the prohibition of dwelling expansion.

In Guquanlu, most units consist of single rooms with kitchens located either in hallways or externally under verandas. These units typically house nuclear families with one child, while approximately one-quarter of surveyed families occupy two or three connected rooms. In contrast, migrant families in Xiawang Village predominantly inhabit two or three-bedroom units, though approximately one-third occupy single rooms housing three people.

The constraints manifest through two primary mechanisms: pressure from communal authorities to prevent housing alterations and government-mandated demolitions of existing modifications. These spatial constraints have redirected residents' adaptation efforts from external modifications to interior customization. This institutional resistance to resident-led modifications has created notable psychological impacts among the study participants.

When prevented from adapting to their living environments, participants frequently exhibited destructive self-reproach and auto-aggressive tendencies. The external restrictions led to a pattern of withdrawal from dwelling maintenance and modification activities, resulting in the concealment of psychological distress symptoms. As one participant from Guquanlu explained: "I extended the bathroom before we did not have it and enlarged the kitchen, but the communal boss reported it to authorities and a landlord forced us to remove changes and only the veranda is left. After, I did not sleep for days and almost lost my job" (Guquanlu interview, May 2022) (Figure 3).

Similar restrictions were documented in Xiawang Village, where vertical expansions incorporating verandas, balconies, and terraces were largely removed following government prohibition based on fire protection regulations. Despite these constraints, verandas remain a significant adaptive feature in both neighborhoods, primarily serving to protect entrances and secure electric bicycles (Figure 3). The psychological importance of these structures is evident in participant responses, with nearly three-quarters of Guquanlu participants and nearly half of Xiawang Village participants expressing a sense of belonging and pride in these structures, despite their functional limitations in the narrow streets of Xiawang Village.

Fig. 3: Photographs of housing alternation in Guquanlu (left) & Xiawang Village (right). (Source: Goran Ivo Marinovic, 2023).

2.2. Interior Adaptation Strategies

In response to the constraints on structural modifications, residents have developed sophisticated interior adaptation strategies to enhance comfort and functionality within their limited spaces:

- Multipurpose Room Configuration: In Guquanlu, families have configured their spaces to serve multiple functions simultaneously (Figure 4). To address the absence of traditional kitchens, residents have invested in flexible cooking equipment.
- Vertical Storage Solutions: Personal belongings are stored on walls or above sleeping areas to maximize limited floor space.
- Wall Personalization: The walls of dwellings hold numerous personal objects that signify pride and belonging. In Xiawang Village, residents have personalized their spaces through wall painting and the application of stickers reflecting spiritual beliefs according to traditional geomancy principles (Figure 5).
- Adaptive Climate Control: Most rooms feature laundry lines and ventilation systems installed on ceilings or portable units placed on the floor. During winter months, these portable units are supplemented with electric blankets and movable heaters, which serve as gathering points for household socialization.

These strategies out of enforced adaptation pattern appear to contribute significantly to burnout manifestations among residents. The documented "destructive self-reproach" and "auto-aggressive tendencies" represent classic symptoms of burnout, where individuals facing persistent environmental stressors beyond their control eventually exhaust their psychological resources. The "pattern of withdrawal from dwelling maintenance" further indicates the emotional exhaustion dimension of burnout, where residents abandon efforts, they perceive as futile.

Fig. 4: Houses interior in Guquanlu. (Source: Goran Ivo Marinovic, 2024).

Fig. 5: Houses interior in Xiawang Village. (Source: Goran Ivo Marinovic, 2024).

3. SELF-ESTEEM AND SELF-ACTUALISATION OF HOUSEHOLDS

3.1. The Relationship Between Housing Adaptations and Wellbeing

Research reveals a significant correlation between housing adaptations and psychological wellbeing among migrant residents in both Guquanlu and Xiawang Village. Housing modifications function not merely as physical improvements but as mechanisms through which families pursue self-esteem and self-actualization despite challenging circumstances. The uneven opportunities for housing envelope expansion and interior alterations directly impact life-course situations where family bonds intensify the need for care and spatial transformation.

3.2. Self-Esteem

Self-esteem serves as a critical buffer against burnout conditions among migrant households. The data demonstrates that participants who successfully appropriate their living spaces experience enhanced optimism and emotional stability. This psychological benefit manifests through achievements in dwelling personalization, which provide tangible rewards in an otherwise constrained environment.

The research identified varying levels of self-esteem across the participant sample:

- High self-esteem with positive worldviews was documented in thirds of respondents from Guquanlu and approximately two-thirds of Xiawang Village participants
- Low self-esteem was reported by the remaining participants, which informal conversations revealed to be associated with various manifestations of depression and burnout.
- Among participants experiencing burnout symptoms:
- One interviewee from Guquanlu expressed profound hopelessness, stating: "The future is predetermined, and I can do nothing about it" (Guquanlu interview, 2023)
- Forty-one of every hundred participants demonstrated minor depression symptoms, with sentiments such as: "Nothing is outside control of community lords" (Xiawang Village interview, 2022)
- Sixteen of every hundred participants reported that their living conditions negatively impacted their physical appearance and social competence

These findings indicate that restricted housing adaptation opportunities directly correlate with diminished self-esteem and increased vulnerability to psychological distress.

3.3. Stages of Self-Actualization Among Migrant Households

The research evaluated self-actualization—defined as migrants' potential to flourish within challenging living circumstances—through participants' reported needs for overcoming burnout, compassion fatigue, and suffocation. Three distinct stages of self-actualization emerged from the data:

- Basic Needs Fulfilment: Most residents (fifty-seven out of a hundred in Guquanlu and sixty-five out of a hundred in Xiawang Village) reported meeting only fundamental needs such as air, water, food, shelter, and functional body temperature without perceiving opportunities for housing improvement. This represents the most basic level of self-actualization within the research context.

- Meaningful Relationships and Respect: A second group of participants (thirty-three out of a hundred in Guquanlu and twenty-seven out of a hundred in Xiawang Village) established meaningful

connections through family, friends, neighbors, and spiritual communities. These participants emphasized the importance of receiving respect from others as a foundation for self-respect, representing an intermediate level of self-actualization.

- Perception of Future Advancement: A smaller proportion of participants (thirteen out of a hundred in Guquanlu and eighteen out of a hundred in Xiawang Village) reported not only achieving the first two stages but also perceiving opportunities for relocation from informal housing to improved living conditions. This group demonstrated the highest level of self-actualization observed in the study.

3.4. Housing Development and Migration Aspirations

These findings established a connection between high self-esteem with progression through all three stages of self-actualization. This result correlates strongly with two key aspirations among migrant households: the desire to develop their current dwelling and the ambition to achieve their fullest potential through belonging and rottenness in community. These aspirations represent psychologically protective mechanisms that enable residents to maintain a sense of agency despite institutional constraints on housing adaptations.

The relationship between housing adaptations and psychological wellbeing identified in this research has significant implications for understanding how vulnerable populations navigate structural limitations through spatial interventions, highlighting the importance of considering psychological dimensions in housing policy development for migrant communities.

4. IMPLICATIONS OF HABITAT RECONFIGURATIONS IN URBAN VILLAGES FOR COSMOPOLITAN

The Chinese urban villages represent microcosms of cosmopolitanism, where diverse migrant populations from various cultural backgrounds coexist in shared spaces. These environments embody the tensions inherent in cosmopolitan settings - while offering economic opportunities and multicultural exposure, they simultaneously create conditions where burnout becomes "the predominant mode of a cosmopolitan environment."[39] This study challenges idealized notions of cosmopolitanism by highlighting how institutional constraints within these diverse settings can undermine migrants' psychological wellbeing.

4.1. Housing Adaptations as Cultural Preservation

When migrants modify their dwellings, they engage in a form of traditional preservation that stands at a counterpoint to homogenizing cosmopolitan forces. The author demonstrates how spatial modifications enable families to maintain cultural practices and strengthen traditional family bonds despite displacement.

These housing adaptations represent physical manifestations intertwined with belonging and well-being of inhabitants.

4.2. Individual Agency Within Governmental Constraints

The study's focus on self-actualization of working migrants is directly connected to the identification of individualism as a core tenet of cosmopolitanism. Migrants who successfully transform their homes demonstrate the right to choose an inhabitation course not determined by the national policies or local government. However, the research also reveals the uneven distribution of this agency, with only a fraction of participants (approximately one-eighth in Guquanlu and one-fifth in Xiawang Village) achieving the highest level of self-actualization through these self-centric practices.

4.3. Implications for Cosmopolitan Urban Planning

This research provides valuable insights into how urban planning policies often fail to recognize the psychological importance of housing adaptability for migrant populations. The findings suggest that truly cosmopolitan cities must create conditions where diverse groups can maintain their unique identities, traditions, and practices through flexible housing policies that acknowledge cultural differences in spatial needs and uses.

The study ultimately demonstrates how the physical transformation of living spaces becomes a critical mechanism through which migrant communities negotiate the complex relationship between cosmopolitanism and tradition, creating microenvironments of cultural preservation within increasingly globalized urban settings.

5. CONCLUSION

Belonging to home and rootedness in community supports migrants' self-care, which is understood as a barometer of emotional and physical well-being.[40] The findings of this study indicate that families' unsuccessful expansion and interior appropriation of houses undermine self-care. Self-care is the central mode of behavior with migrants who share a passion for transforming houses and devote themself to place making and decorations. The task of place-making is achieved with the conviction that their contributions are of significance, thus they continue to project different futures when things get difficult. Their focused-on flourishment depends on viewing current inhabitation as passing through on the way to a better living environment.

This relatively small population, representing approximately one-eighth of participants from Guquanlu and nearly one-fifth in Xiawang Village, perceived symptoms of burnout as entry into the metropolis. They benefit from low living costs and networking with their ethnic group or neighbors to save for purchasing a house, an apartment or a shop and provide a better future for their children and grandchildren. The other participants with lover self-actualization capacity struggle to maintain family bonds and collectively fight burnout and compassion fatigue. Lack of migrants' self-esteem is conditioned by survival as they struggle to prioritize well-being while focusing on meeting basic needs. Thus, they fall under the circumstances of burnout which is the predominant mode of a cosmopolitan environment.

Recorded higher self-esteem channeled through the transformation of units protects families from the consequences of burnout. A slight increase in self-esteem provides a basis of meaning and significance through spiritualism or beliefs and by making an impact through group identification, relationships, children, or other life achievements. Their resilience confirms the need to thoughtfully and intentionally promote health and well-being in opposition to perceived life as merely surviving.[41] Improved household satisfaction in Chinese urban villages is marked by the alternation of envelopes, closed-place appropriation and building up family bonds. Despite the positive view of adaptation houses, this group of migrants suffers from ethnic discrimination, racial exclusion and low-income stigmatization.

In disapproval of structuring a systematic approach to supporting working migrants' self-care and developing a toolbox of techniques versus burnouts,[42] this study suggests that housing transformation should accommodate migrant households' effective delivery of homemaking across a range of cosmopolitan contexts with varied needs and circumstances. The context of migrants' burnout and exhaustion concerning self-care needs longitudinal studies to develop a more comprehensive understanding of these variables.

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CONFLICT OF INTEREST

The author declares that there are no conflicts of interest.

NOTES AND REFERENCES

1. Anthes, Emily. *The great indoors: The surprising science of how buildings shape our behavior, health, and happiness*. Scientific American/Farrar, Straus and Giroux, 2020.
2. Liu, Shouying, and Yue Zhang. "Cities without slums? China's land regime and dual-track urbanization." *Cities* 101 (2020): 102652.
3. Chung, Him. "Building an image of Villages-in-the-city: A clarification of China's distinct urban spaces." *International Journal of Urban and Regional Research* 34, no. 2 (2010): 421-437.
4. Liu, Shouying, and Yue Zhang. "Cities without slums? China's land regime and dual-track urbanization." *Cities* 101 (2020): 102652.
5. Gao, Yuan, Sina Shahab, and Negar Ahmadpoor. "Morphology of urban villages in China: A case study of dayuan village in Guangzhou." *Urban Science* 4, no. 2 (2020): 23.
6. Sun, Li, and Peter Ho. "Formalizing informal homes, a bad idea: The credibility thesis applied to China's "extra-legal" housing." *Land Use Policy* 79 (2018): 891-901.
7. Han, Byung-Chul. *The Burnout Society*. Stanford University Press, 2015.
8. White, Andrew. "Byung-Chul Han and Burnout." PhD diss., Macquarie University, 2022.
9. Fisher, Berenice, and Joan Tronto. "Towards a feminist theory of care. In Circles of care: Work and identity in women's lives." State University of New York Press (1990). p.40.
10. Bao, Haijun, Hao Dong, Jinshui Jia, Yi Peng, and Qiuxiang Li. "Impacts of land expropriation on the entrepreneurial decision-making behavior of land-lost peasants: An agent-based simulation." *Habitat International* 95 (2020): 102096.
11. Liu, Yansui. *Urban-rural Transformation Geography*. Singapore: Springer, 2021.
12. Gao, Yuan, Sina Shahab, and Negar Ahmadpoor. "Morphology of urban villages in China: A case study of dayuan village in Guangzhou." *Urban Science* 4, no. 2 (2020): 23.
13. Yuan, Dinghuan, Yung Yau, Haijun Bao, and Wenyi Lin. "A framework for understanding the institutional arrangements of urban village redevelopment projects in China." *Land Use Policy* 99 (2020): 104998.
14. Wu, Yue, Yi Zhang, Zexu Han, Siyuan Zhang, and Xiangyi Li. "Examining the Planning Policies of Urban Villages Guided by China's New-Type Urbanization: A Case Study of Hangzhou City." *International Journal of Environmental Research and Public Health* 19, no. 24 (2022): 16596.
15. National Bureau of Statistics of China. "China statistical yearbook 2023. Beijing: China Statistics Press. " (2024): https://www.stats.gov.cn/sj/ndsj/2023/indexeh.htm
16. Tong, De, Jun Chu, Qing Han, and Xuan Liu. "How land finance drives urban expansion under fiscal pressure: Evidence from Chinese cities." *Land* 11, no. 2 (2022): 253.
17. Chan, Kam Wing, and Yanning Wei. "Two systems in one country: the origin, functions, and mechanisms of the rural-urban dual system in China." In *Urban China Reframed*, pp. 82-114. Routledge, 2021.
18. Shanghai Municipal Statistics Bureau. "Communiqué of the Shanghai Municipal Statistics Bureau on Major Figures of the 2021 Population Census." (2021). Accessed 10 December 2024. http://service.shanghai.gov.cn/sheninfo/newsdetail.aspx?Id=f10a9087-d795-4f49-81b0-eaea7fb3eee9.

19. Hussain, Touseef, Jaffar Abbas, Zou Wei, Shakeel Ahmad, Bi Xuehao, and Zhu Gaoli. "Impact of urban village disamenity on neighboring residential properties: empirical evidence from Nanjing through hedonic pricing model appraisal." *Journal of Urban Planning and Development* 147, no. 1 (2021): 04020055.
20. Lu, Tingting, Fangzhu Zhang, and Fulong Wu. "The sense of community in homeowner association neighborhoods in Urban China: a Study of Wenzhou." *Housing Policy Debate* 32, no. 4-5 (2022): 642-660.
21. Akimova, Varvara V., and Margarita A. Kuptsova. "Modern garment industry of Asia: Geographical features of development and the main areas of concentration." *Nauku o zemle* 67, no. 3 (2022): 386–408.
22. Lu, Tingting, Fangzhu Zhang, and Fulong Wu. "The sense of community in homeowner association neighborhoods in Urban China: a Study of Wenzhou." *Housing policy debate* 32, no. 4-5 (2022): 642-660.
23. Held, Virginia. *The ethics of care: Personal, political, and global.* Oxford University Press, 2005. p.42.
24. Tronto, Joan. *Moral boundaries: A political argument for an ethic of care.* Routledge, 2020. p.19.
25. Toljamo, Maisa, and Maija Hentinen. "Adherence to self-care and social support." *Journal of clinical nursing* 10, no. 5 (2001): 618-627.
26. World Health Organization. *WHO consolidated guideline on self-care interventions for health: sexual and reproductive health and rights.* World Health Organization, 2019. p. x.
27. Schaufeli, Wilmar B., Gerard H. Maassen, Arnold B. Bakker, and Herman J. Sixma. "Stability and change in burnout: A 10-year follow-up study among primary care physicians." *Journal of Occupational and Organizational Psychology* 84, no. 2 (2011): 248-267.
28. Golembiewski, Robert T., Robert Munzenrider, and Diane Carter. "Phases of progressive burnout and their work site covariants: Critical issues in OD research and praxis." *The Journal of Applied Behavioral Science* 19, no. 4 (1983): 461-481.
29. Lawless, Michael T., Matthew Tieu, Rebecca Feo, and Alison L. Kitson. "Theories of self-care and self-management of long-term conditions by community-dwelling older adults: A systematic review and meta-ethnography." *Social Science & Medicine* 287 (2021): 114393.
30. Allemand, Mathias, Andrea E. Grünenfelder-Steiger, and Christoph Flückiger. "Scar model." In *Encyclopedia of Personality and Individual Differences,* pp.4552-4555. p.4553. Cham: Springer International Publishing, 2020.
31. Hansen, Ian G. "Self-Actualization." In *Encyclopedia of Personality and Individual Differences,* pp.4641-4644. Cham: Springer International Publishing, 2020.
32. Jung, Chang Lyul, Alan Walker, and Yongpil Moon. "Reconciling for-profit social service provision with a regulatory framework: Korean long-term care." *International Journal of Care and Caring* 7, no. 1 (2023): 33-49.
33. Al-Betawi, Yamen N., Fadia H. Al Nassar, Ahmad A. Al Husban, and Safa Al Husban. "Transformations in the built form as a reflection of social change, the case of apartment buildings in Amman." *Open House International* 45, no. 1/2 (2020): 143-171.
34. Lombard, Melanie, Jaime Hernández-García, and Isaac Salgado-Ramírez. "Beyond displacement: Territorialization in the port city of Buenaventura, Colombia." *Territory, Politics, Governance* 11, no. 7 (2023): 1324-1343.
35. Pearson, Charlotte, Richard Brunner, Tom Porter, and Nick Watson. "Personalisation and the promise of independent living: where now for cash, care and control for disability organisations across the UK?." *Scandinavian Journal of Disability Research* 22, no. 1 (2020): 285-295.
36. Afshari, Poorandoht, and Shahram Yazdani. "Meta-ethnography, a method for the synthesis of qualitative research: a narrative review." *The Journal of Qualitative Research in Health Sciences* 13, no. 2 (2024): 111-117.

37. Lawless, Michael T., Matthew Tieu, Rebecca Feo, and Alison L. Kitson. "Theories of self-care and self-management of long-term conditions by community-dwelling older adults: A systematic review and meta-ethnography." Social Science & Medicine 287 (2021): 114393. p. 4.

38. Hasan, Nazmul, Rashed Ullah Rana, Sharmin Chowdhury, Afrin Jahan Dola, and Moustaq Karim Khan Rony. "Ethical considerations in research." *Journal of Nursing Research, Patient Safety and Practise* (JNRPSP) 2799-1210 1, no. 01 (2021): 1-4.

39. Badru, Oluwaseun Abdulganiyu, Tunde Adeyemo Alabi, Samuel Sijibomi Okerinde, Muhammad Auwal Kabir, Aisha Abdulrazaq, Oluwafemi Atanda Adeagbo, and Fatai Adesina Badru. "Investigating the emigration intention of health care workers: A cross-sectional study." *Nursing open* 11, no. 5 (2024): e2170.

40. Nayak, Suryia. "For women of colour in social work: Black feminist self-care practice based on Audre Lorde's radical pioneering principles." *Critical and Radical Social Work* 8, no. 3 (2020): 405-421.

41. Brown, Mary-Ellen. "Hazards of our helping profession: A practical self-care model for community practice." *Social Work* 65, no. 1 (2020): 38-44.

42. Maddock, Alan, Pearse McCusker, Carolyn Blair, and Audrey Roulston. "The mindfulness-based social work and self-care programme: A mixed methods evaluation study." *The British Journal of Social Work* 52, no. 5 (2022): 2760-2777.

Traditional Dwellings and Settlements
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THE INFLUENCE OF THE JAPANESE SYSTEM ON TRADITIONAL KOREAN ARCHITECTURE IN EARLY 20TH CENTURY AND THE DEFINITION OF EARLY-MODERN HAN-OK

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THE INFLUENCE OF THE JAPANESE SYSTEM ON TRADITIONAL KOREAN ARCHITECTURE IN EARLY 20TH CENTURY AND THE DEFINITION OF EARLY-MODERN HAN-OK

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In the early 20th century, many foreign cultures, especially Japanese ones, began to flow into Korea based on the harbor opening as a base. The influx of cultures accelerated after 1910, and the somewhat forced influx continued until 1945. Regardless of its form, everyone agrees that Korea was modernized during that era. However, the details of the basis for modernization and the process are unclear. The same trend was observed in the realm of architecture. The introduction of foreign architectural styles took two distinct forms. One was the construction of Japanese-style buildings in Korea, some of which were adapted to suit the Korean context and subsequently influenced Korean architecture. These structures, now being recognized as early 20th-century modern heritages, are in dire need of preservation. However, the lack of in-depth understanding and research on Japanese architecture has led to many instances of incomplete investigation and preservation. Another form of influx is through institutions. Japan implemented its laws and systems in Korea, and this would have significantly impacted the changes in the forms of existing architecture, towns, and cities. For instance, it is widely accepted that modern buildings, such as concrete apartments and brick-structured houses built after the 20th century, are emblematic of modernization, while traditional Korean houses, or Han-ok, are unique to Korea. However, if there were Han-ok housing complexes developed in the early 20th century, they would have inevitably been influenced by the prevailing era and the forces of modernization. These altered traditional houses served as a bridge, transitioning from what we commonly refer to as historically old traditions to the modern era, and played a pivotal role in the acceptance of other cultures and values. This study investigates the basis and process of how this institutional inflow affected traditional Korean houses. This study aims to define how Japan's modern building codes were applied to traditional Korean houses and the characteristics of modern Han-ok that were born as a result, which are different from existing traditional Han-ok.

1. INTRODUCTION

1.1. Foreign Cultures in the 20th Century and Their Legacy

In the late 19th century, after the unprecedented opening of its ports, foreign cultures entered Korea which had traditionally been closed to outsiders, and this social background promoted modernization whether it was welcomed or not. New technologies were introduced, and urban and residential developments were implemented. Undeniably, Japanese culture greatly influenced Korea during this period.

Significant changes occurred in the field of architecture in urban and rural areas. During this period, Japan built Japanese-style villages and houses in Korea and Taiwan to for permanent settlements. The author's previous research paper discussed these buildings called "Japanese-style architecture,"[1], which were developed into a unique residential form modified to adapt to the Korean climate or influenced by the Korean lifestyle, and different from traditional Japanese housing. Although the two countries agree that they influenced each other in modern housing (both Korean and Japanese styles) during this period, since this is a sensitive matter for historical reasons, research on this subject often ends in fact-finding surveys or records that remain

ambiguous and have not been thoroughly studied or examined. The paper also emphasized the need to collect and compare information on the historical background of Japan and Japanese architecture for accurate research.

This study follows up on the author's previous research and examines the changes in Korean residential spaces during the early 20th century. Its purpose is to clarify the causes and processes of Japan's influence on these changes.

1.2. Traditional Hanok and Modern Hanok

Traditional Korean houses are called "Hanok". A traditional Hanok is basically a wooden structure, but because it uses an Ondol (a heating system that puts a fire under the room floor for heating), stone and soil are mainly used for the floor and walls. A Hanok can increase in size by dispersing into several buildings instead of one, but this dispersion is possible because the Ondol, a separate heating system for each room, is used (Figure 1).

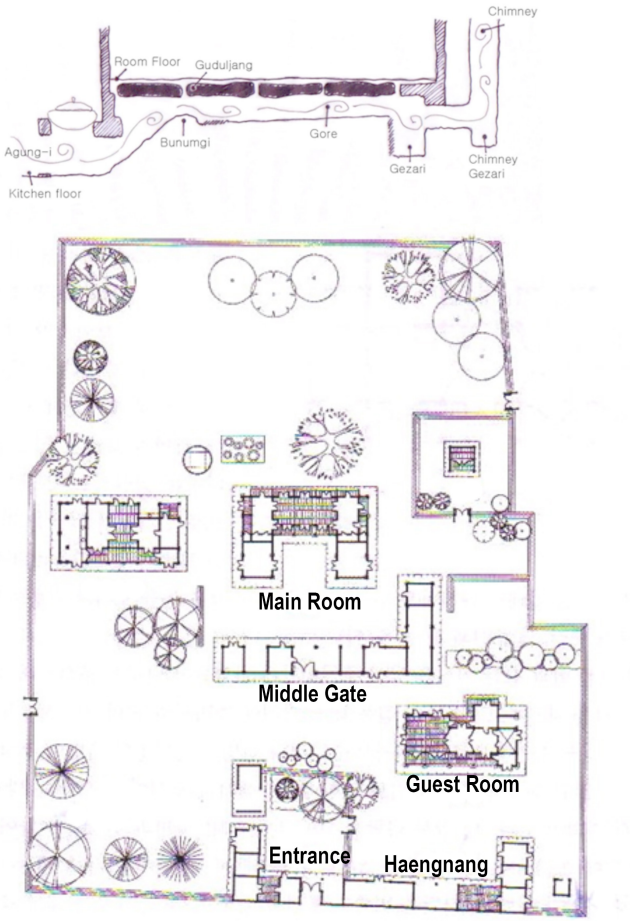


Figure 1. Ondol structure and the distributed layout of the Hanok

Hanok houses are basically composed of three rooms (spaces): the main room, the Maru, and the kitchen. The cooking heat from the kitchen is used as the heating source for the main room (bedroom). The Maru is divided into four types depending on its size and role: Daecheong-maru, Jjong-maru, Toen-maru, and Nu-maru. Daecheong-maru is a semi-external space with one or more open walls, while the others are similar to verandas.

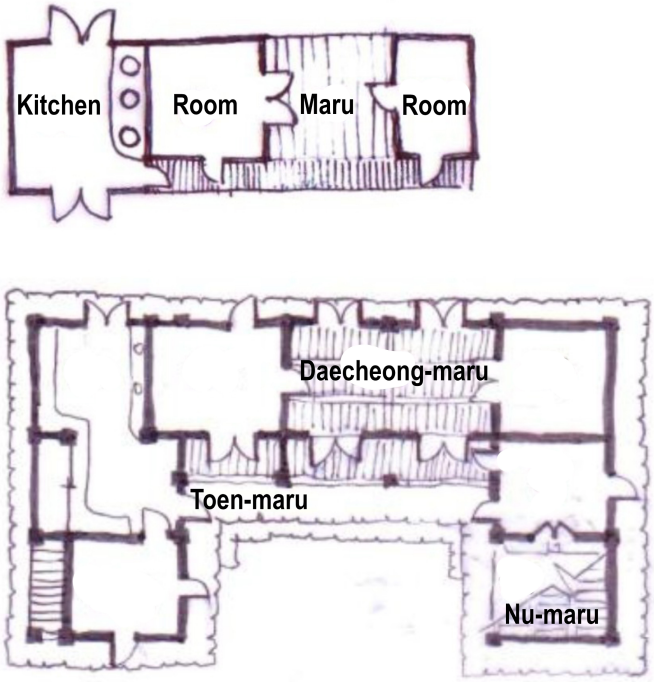


Figure 2. Basic floor plan of the Hanok (Up) and the Maru (Bottom)

The Maru differs from the main room (bedroom) in that it is a summer space with a wooden floor and no heating facilities. The yard of a traditional Korean house is different from the gardens in other countries. It is made up of only compacted dirt without a single blade of grass because the yard is intended as a workspace and not as a garden. The yard is directly connected to the Maru and is often used as a single space (Figure 3). it is used as a workspace in daily life and is also important as an event space for ancestral rites and weddings. In Korea, where ancestral spirits are worshipped, the yard also has a religious spatial meaning in which ancestors' tablets are kept.

Figure 3. Relationship between the Maru and the yard

Regarding the floor plan composition, the most significant difference between the traditional and modern residential spaces is the presence or absence of the Maru. After the war, single-family houses in Korea were mainly brick-clad and evolved into a form where walls or windows surrounded four sides without completely open spaces such as a yard. Of course, the apartments that became the main residential spaces after the 1970s do not have a semi-external space like the Maru. However, the Maru did not suddenly disappear within a day.

The Hanoks built in residential areas that developed in the early 20th century show differences in floor plans compared to their traditional counterparts. Professor Nam Hae-kyeong was the first to differentiate the Hanoks in Jeonju Hanok Village from the traditional ones, calling them modern Hanoks. Later, many other researchers introduced the concept of modern Hanoks to refer to 20th-century housing, such as the Bukchon Hanok Village in Seoul, indicating changes in the composition of residential spaces in Korea in the early 20th century. [2 3]

1.3. Jeonju Hanok Village and Modern Hanoks

This paper focuses on the modern Hanoks in Jeonju Hanok Village. Jeonju is the central city of Jeollabuk-do, where administrative agencies have been long been located. Jeonju Hanok Village covers an area of approximately 300,000 square meters in Jeonju-si, Gyo-dong, Pungnam-dong, and Omokdae District 2 and currently has approximately 700 Hanoks (735 Hanoks, 212 non-Hanoks).

Jeonju Hanok village began to develop during the Goryeo Dynasty. However, it can be said that the residential complex began to take shape in 1910 when the provincial government building for Jeolla-do of the Joseon Dynasty was established at its current location. The location of the Hanok village is outside the east gate of the old Jeonju Fortress, and as can be seen from old maps from the 18th century onward, there are no residential areas unlike nowadays. It can be inferred that it became fully developed around 1920, during the colonial period, when Japan intervened in its development. The development of residential areas on the city's outskirts became necessary to accommodate the growing population.

In the early days, when the Japanese began to arrive, they lived outside the West Gate of Jeonju; but after the demolition of Jeonju Castle in 1911, they began to reside in Jungang-dong (the center of the city). Subsequently, under the name of modernization, the city was reorganized into a grid pattern, with the reorganization of the three city districts. Eventually, a Japanese residential area was formed at the center of Jeonju City, a Christian building and missionary residential area in the northwest, and a Hanok Village as a residential area for Koreans in the east (Figure 4).

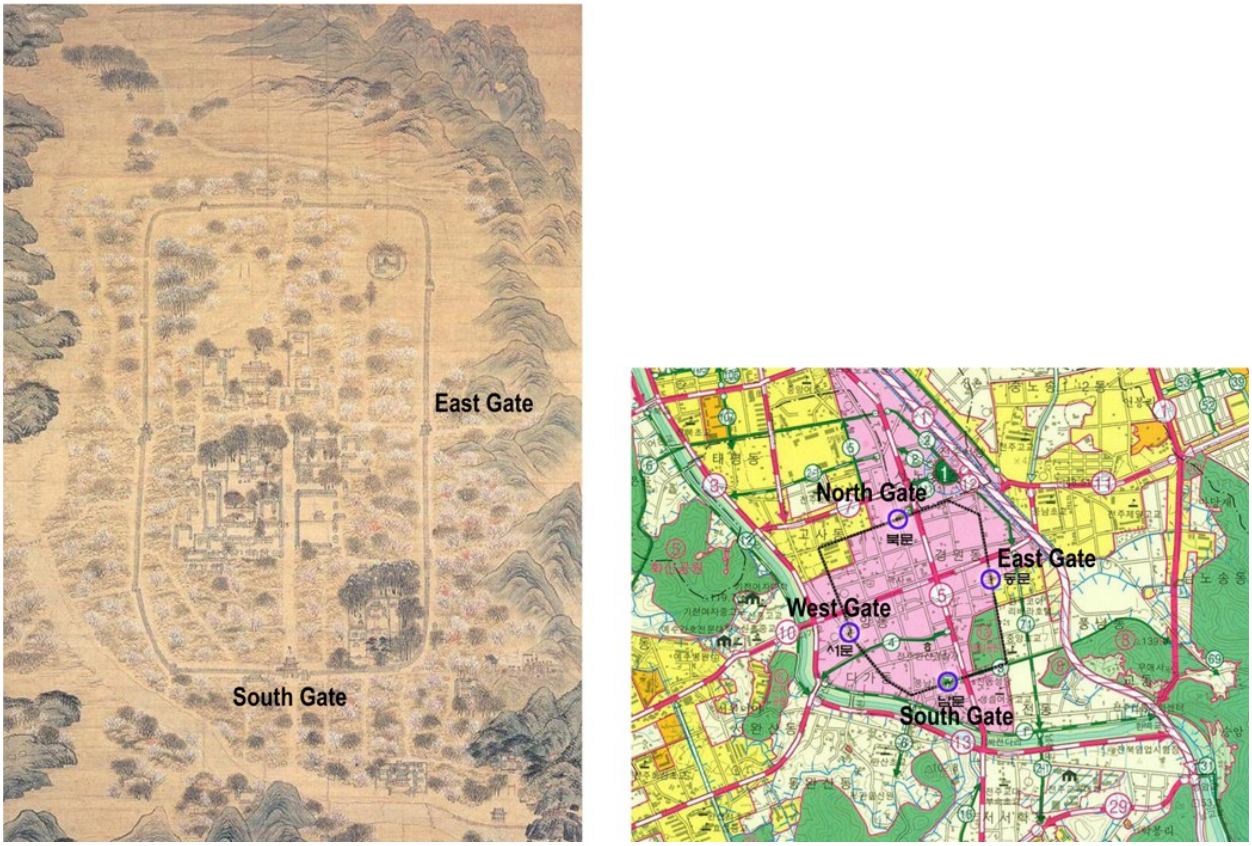


Figure 4. 18th-century map from Kyujanggak Archives (Left) and current map(Current) of Jeonju city. The Hanok Village is located outside of the East and South gate. The village was not formed in 18th-century.

Most of the Hanoks in Jeonju Hanok Village are not very large. This is because they were meant to be residential areas for the working classes. They have now been restored with tile roofs, but most of them originally had thatched roofs. As many areas have been renovated over the years, many people have lived there. The original appearance is unknown, but the basic floor plan has been inferred, and some restorations are being made.

Of the existing Hanoks, 75% or 534 of them are being used for residential purposes (with the remaining 25% being registered for commercial purposes). They were constructed from 1920 to 2000, and about 30% of them were built during the Japanese colonial period (Table 1). As it is a residential area formed over a long period, there are various housing styles, and it is not easy to estimate the original form owing to expansion and remodeling over a long period of time. Of these, 10 have maintained their original form since they were built, and 4 are hybrids of Japanese and modern styles.

Year aroud	1920	1930	1940	1950	1960	1970	1980	1990	2000	Other	Total
Number	22	33	105	59	44	105	33	26	24	83	534

Type	Name	Charactristics	Number
1	Original	maintained it original shape since it was build	10
2	Modern eclectic	Combined elements of Japanese or modern styles	4
3-1	Room rental	Extended the room while maintaining the original shape Renting a room, toilet, washroom, bathroom, etc. as a unit	11
3-2	Fence extension	Extended the room to the fence while maintaining the original shape Utilizing the space between the building and the fence Used the space as an external kitchen	12
3-3	Room + kitchen rental	Extended the room or partitioned it Expanded the kitchen together with the room Installed a kitchen through transformation or expansion of space Used the space for rent	10
3-4	Family rental	Used it as a multi-family rental style by expanding or transforming the main room Rented it as a room or a house	2
3-5	Annex rental	The main house is used by the owner Renting the annex	2
4	Commercial-residential complex	Put commercial-residential complex function by expanding the room or transforming the space Used the part of the main room	2
5	Other	Mixed residential and business functions	2
TOTAL			55

Table 1. Construction years and characteristics of the remaining houses in Jeonju Hanok Village

As mentioned previously, one of the major differences between traditional Korean houses and modern houses is the presence or absence of wooden floors. It can be seen that the Daecheong wooden floors have disappeared in the modern Korean houses in Jeonju Hanok Village. In other words, changes in the wooden floor space are a major characteristic of modern Korean houses (Figure 5).

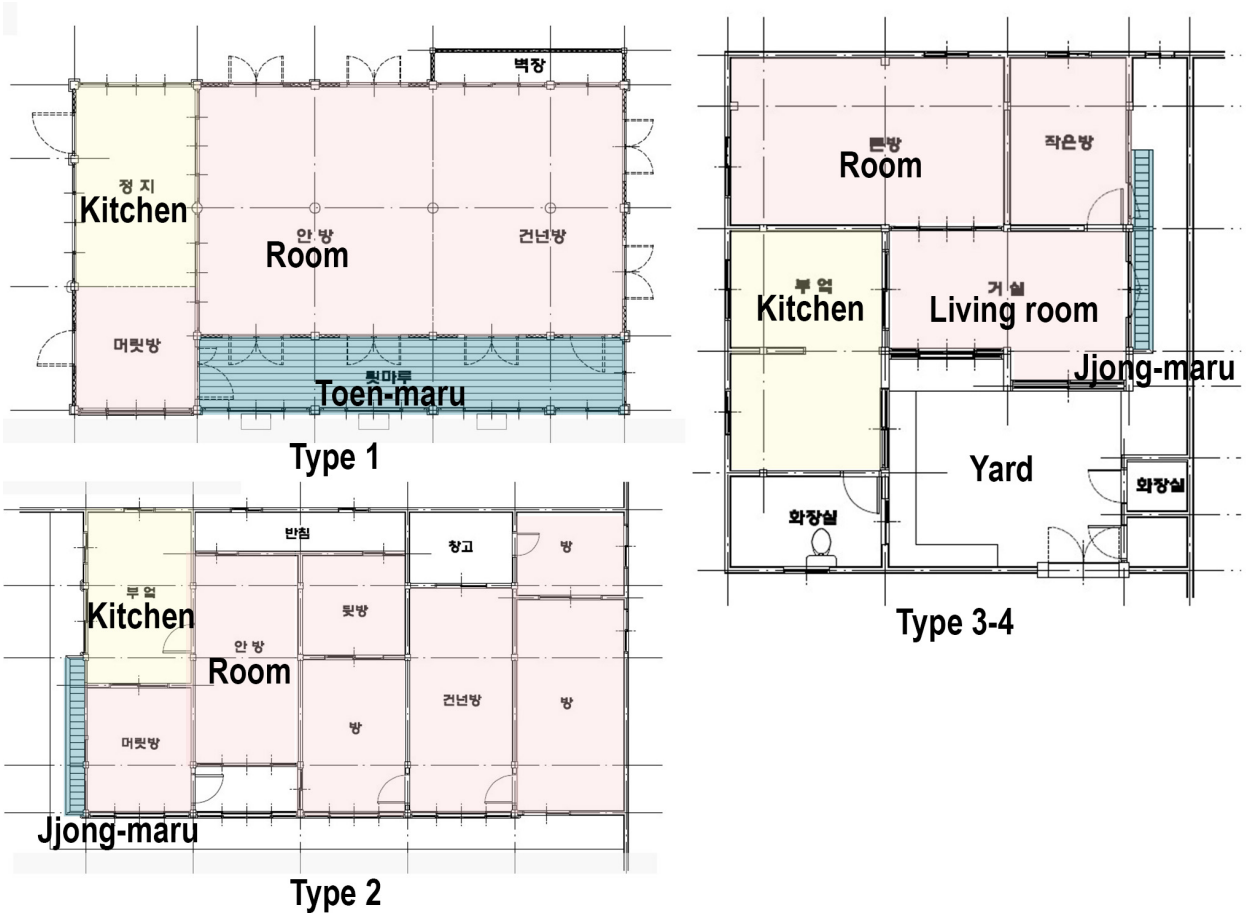


Figure 5. An example of the modern Hanok floor plan. The maru (blue area) has been reduced. Daecheong-maru has disappeared and has become a room or living room (pink area).

1.4. Maru and Glass Doors

Researchers have found traces of glass doors installed on the outside Maru (the part that should have been open to the outside) in some modern Hanoks in Jeonju Hanok Village. This is the first instance of a closing Maru, which does not exist in traditional Hanoks (Figure 6). There is no clear record of whether this was simply a new attempt by individuals or a change with the times. There is a theory that "the Japanese did not allow houses to be built without glass doors on the floors" at the time of development, but there is no record of such a regulation in Korea or Japan.

If this is true, many modern Hanoks at that time had glass doors installed mandatorily, and the use of the Maru as a closed space had been carried out for a long time, which may have influenced the layout of modern and contemporary houses as a new lifestyle. In fact, most Hanoks in Jeonju Hanok Village that were built, remodeled, and expanded after World War 2 had their Daecheong-maru converted into bedrooms or living rooms with their size reduced and omitted.

Figure 6. Maru without glass (Left) and with glasson the outside (Right)

However, a major contradiction in this theory is that Jeonju Hanok Village was a residential area developed for the working class, and glass was almost entirely a luxury item in the 1910s. Not being able to build a house without installing glass doors would be practically like not being able to build a house. However, this does not make sense as the Japanese were actually developing residential areas for Koreans.

This study suggests that there is a serious possibility that the Japanese architectural guidance that "does not allow houses to be built without glass doors outside of Maru space." First, this research examines the development process of Japan's modern architectural regulations and the situation of architectural guidance in the country and infers the kind of architectural guidance Japan would have given to the Hanoks if the same regulations had been applied to colonies. Additionally, the social background of Korea at the time is investigated to determine the possibility of such architectural guidance.

2. ARCHITECTURE FOR MODERNIZATION

2.1. History of Japanese Building Rules During the Nineteenth and Early Twentieth Centuries

Before modernization, there were restrictions and prohibitions on houses in Japan, but they were for the formality of the class or for fire prevention purposes. It is reported that building-related laws for modernization were established over three periods, from the early Meiji period (around 1870) to the mid-Taisho period (around 1920). [4]

1) Early Meiji period (1868-1885): Basic building rules for individual purposes began in some regions.

2) Mid-Meiji period (around 1886-1893): Systematic "Nagaya building rules, etc." were distributed in each region.
3) Late Meiji period to early Taisho period (around 1894-1918): Transition to comprehensive building rules.

The implementation details of these building rules for each region and the urban planning contents were added to the Urban Building Act of 1919, marking the beginning of a comprehensive building-code system. In this study, we infer how the floor space of the Hanok was understood and guided based on the architectural regulations and enforcement ordinances in Japan after 1900.

2.2. Epidemics and Architecture

Nagaya is communal housing for the working class in Japan with several houses connected like townhouses and sharing a wall with the neighboring houses. In existence since the Heian period (794-1185), Nagaya were built in greater numbers during the Edo period (1603-1868) to accommodate the mass influx of people into the city (Figure 7). Cholera epidemics in 1879 and 1886 caused over 100,000 casualties, and improving the living environment became an important task from the perspective of public safety. Against the backdrop of rapid urban growth, large-scale fires, and epidemics of infectious diseases, "Nagaya building rules" were promulgated in 1886, and partial records remain about the implementation results in three areas: Osaka, Kanagawa (including Yokohama City), and Hyogo (including Kobe City). [4]

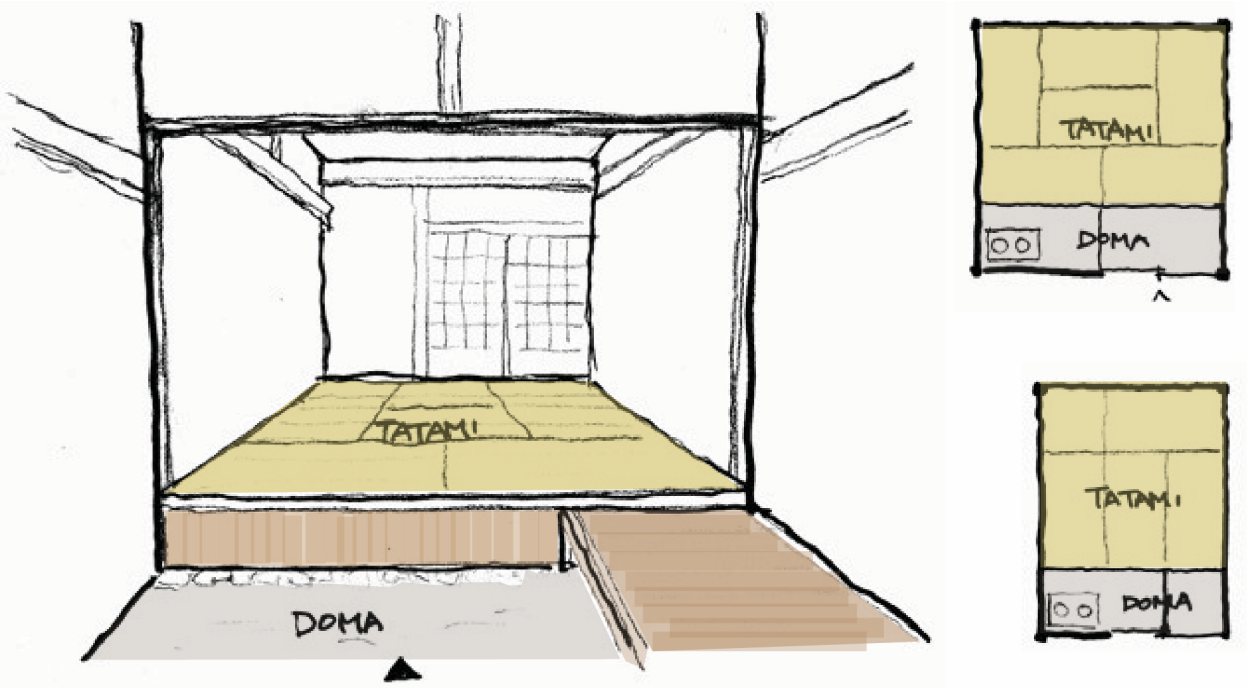


Figure 7. Floor plan of the Nagaya

"Nagaya building rules" were evaluated as having contributed to countermeasures against cholera. Subsequently, voices began to call for countermeasures using the Law on House Construction during the Problematic Plague (the first plague in 1899). [5]

At that time, the Ministry of Home Affairs Sanitation Bureau ordered Takagi to undertake business trips to Osaka and Hyogo to investigate the actual state of the plague epidemic. He suggested disinfection and cleanliness of the land and houses as an emergency measure during the situation and proposed the completion of the construction of the waterworks and the House Construction Act and the Factory Sanitation Act as future measures. The following article is a part of that report which identifies and describes sanitary problems in buildings. [6]

> "Establishing a House Construction Act: Many houses in the area are unsanitary; among them, houses in Osaka City are cut off from sunlight and air ventilation, and the damp air from the land quickly enters the room…" [6]

In same year, the Journal of Japan Private Hygiene Association published the full text of Article 29 of the Honolulu Health Code promulgated with the purpose of preventing plague.[7] It included contents on the distance between buildings, windows, and ventilation.

The necessity of reorganizing buildings as a solution to prevent infectious diseases has been noted and emphasized from various perspectives in society. However, it was not resolved by the majority of cautious people who considered "the Building Act (and measures using it) to be an indirect means". Subsequently, the second plague period was prevalent from 1905 to 1909, causing 1,768 casualties.

In June 1905, Kitasato, the director of the Ministry of Home Affairs' Infectious Disease Research Institute, also mentioned the following measures against rats: first, restricting the structure of imported cargo warehouses; second, restricting general housing; and third, restricting the construction of public rental housing. [8] Although the Tokyo City Assistant Officer opposed this, saying that it would be impossible to implement, the Metropolitan Police Department enacted the Warehouse and Barn Control Regulations in December of the same year. [9] This influenced the enactment of warehouse control-related regulations enacted in Kanagawa, Hyogo, Osaka, and Aichi (regions with port cities) the following year.

In 1907, the Metropolitan Police Department enacted the Regulations on Nagaya Structural Restrictions, which dealt with structural restrictions for houses with regard to hygiene, such as the height of the floor and the ground. [10] Additionally, the Regulation for Facilities to Prevent Rats in Landed Houses for Plague Prevention was enacted in 1909. [11] In other words, as Kitasato argued, building restrictions for hygiene were gradually being implemented in houses.

Osaka had suffered the most from the plague, and promulgated in 1909, more detailed provisions for hygiene improvement can be found in the Osaka Building Restrictions Regulations.[12] In order to improve hygiene, moisture-proofing, ventilation, lighting, and preventing rats from entering were considered important, and regulations related to these can also be found. In particular, Article 10, with its provisions on building materials, explains materials and the necessary thickness to prevent rat intrusion, and Articles 23 and 27 explain about the areas that must be blocked with the aforementioned materials to prevent rats from intruding into the space under the floor or above the ceiling.

2.3. Architectural Guidance for Sanitation Given to Hanoks

In the early 1900s, Japan was sensitive to preventing rats from invading living spaces in houses. In such a social atmosphere, Daecheung-maru, which does not exist in Japanese houses, can be interpreted as a living space directly connected to the outside, and it is possible that architectural guidance was given to install something that could separate it from the outside, such as a window, door, or wall.

The Maru of the Hanoks had a different purpose from the Engawa of Japan. The relationship between the Maru and the yard in Korea was not the same as the relationship between the room and toma (floor space made of soil, mainly used as the kitchen area) of the Japanese Nagaya. However, it is unlikely that the Japanese sufficiently studied and understood it and issued architectural guidance. At that time, Japan's architectural guidance was not conducted by the Ministry of Land, Infrastructure, Transport and Tourism as in the present, but by the Metropolitan Police Agency. Therefore, it was more mandatory then than nowadays, and it was even more difficult for Koreans to explain or question their guidance.

3. EARLY 20th CENTURY CRIME PREVENTION AND HANOKS

In Korea, the slave system was gradually abolished from the 18th century onward and was officially abolished in 1894. However, since the enslaved people who had lived and worked at their masters' houses lost their places to live and work, many of them continued to live in their former masters' houses and work there even after the abolition of slavery.

At the time of the Japanese annexation of Korea, the former abolished the Korean bureaucracy, and most of the bureaucrats were wealthy enough to employ people. As all the bureaucrats now became unemployed, the number of people who could no longer manage the enslaved people (hereafter referred to formerly enslaved people who lived and worked in others' houses) increased. Inevitably, most enslaved people became homeless and unemployed. Originally, houses with enslaved people had servant quarters called Haengnang, where the

workers lived, and even after the Japanese annexation, many continued to live in the Haengnang and did not receive wages. Their living environment was poor, with many people living in a small room.

On the issue of the Haengnang, Japan said that:
1) it was not economically viable,
2) it was a hotbed of vagrants,
and 3) it was ugly and damaged its reputation

In particular, the claim that it was a hotbed of vagrants reflected Japan's desire for stability in the system. [13] There was also an opinion that the Haengnang was unsuitable for hygiene and architectural reform, and hence its abolition was necessary. The social repercussions of the residences of the formerly enslaved people continued until the 1920s, and during that period, Japan responded harshly to public security and the Haengnang space in Korea. After the Annexation of Korea, Japan, desirous of quickly achieving stability in the system, was negatively viewing the floor plan of the Hanoks which they thought were causing problems in crime prevention. [14] [15] [16]

Under such social circumstances, crime prevention can be cited as the second reason for ordering doors to be installed on Maru. As shown in Figure 9, Maru can be entered from the yard without any restrictions (there is of course a lock on the door between the floor and the room). As described above, as the number of homeless and jobless enslaved people increased, public safety deteriorated, starting with petty theft.

According to the explanation of the Japanese 1910 building system, the roles expected of doors and windows, described as "the roles that a door or window in a building should have in addition to its function", are 1) blocking light 2) preventing the inside from being seen 3) stopping ventilation 4) preventing rain from coming in 5) preventing insects, rats, and thieves from entering 6) blocking noise 7) preventing fire, etc.

If the strength of a door or window is lower than that of the wall, ceiling, or floor, it becomes one of the leading causes of thieves entering. [17]

An outer wall must surround the living space, and the Maru, which is concerned with belonging to the living space, must also be surrounded by four side walls. However, one or both sides of the Maru do not have walls; instead, the objects that exist (usually doors or windows, but there are none in the case of the Maru) do not perform role number 5 described above. Therefore, based on Japanese building regulations, it is possible that the instructions were given for installing doors on the Maru of Hanoks.

4. GLASS WINDOWS INSTALLED IN HANOKS

4.1. Doors Installed on the Maru

The windows on the Maru of a modern Korean house are sliding doors, and their forms are similar to those installed on the outside of the Japanese Engawa. As the guidance came from Japan, it is possible that they introduced a familiar method. However, if something was needed to isolate the Maru from the outside for hygiene or crime prevention (or both), the purpose could have been achieved by installing a wall and a door with the same structure as those used in existing bedrooms.

In Japan's modern building regulations, improving hygiene in buildings was not confined to only preventing rats from entering. The importance of lighting and ventilation also began to be emphasized, and rules regarding the minimum size of windows for lighting also began to appear in the early 1900s. The figures for the minimum size of windows vary depending on the region and the period; however, they require it to be a specific ratio of the room or floor area. For example, Article 30 of the Osaka Building Regulations states that "the lighting area of a house shall be at least 1/5 of the floor area of each floor, but if the lighting facility is made of glass, it may be at least 1/8". [18]

Korea uses the Ondol system to heat the building structure by directly transmitting heat from under the floor. Although it is a wooden structure, the main materials for the floor and walls are soil and stone, and hence it is difficult to make a large window in the middle of the wall. Therefore, in order to adhere to the above lighting area provision, a window area that is approximately a certain percentage of the floor size of the house must be covered by the Maru. Depending on the floor plan, it may be necessary to select glass as the window material instead of the existing paper-covered one to reduce the size needed for the lighting area.

The rules used as the basis were all implemented in mainland Japan, and it is highly likely that similar building codes were applied to Korea as well. To modernize their standards, installing doors on the floors of Hanoks could be one way to improve hygiene and prevent crime. However, the biggest contradiction of this paper's hypothesis that "the Japanese did not allow houses to be built without glass doors outside of Maru space" is that they did order the use of glass. Since glass was very expensive during the early 20th century and Jeonju Hanok Villages were residences for the working class, it is questionable if glass would have been used in their housing. In the early 20th century, glass was already being used as an architectural material in Korea, such as in foreign embassies and banks. However, this glass was imported from Europe, and it is not easy to see how they would have ordered the use of such material in the homes of the Korean working classes.

4.2. Early 20th-Century Japanese Houses and Glass

In the early 20th century, foreign ambassadors' residences and Yokan-tsuki houses (designed by adding Western-style rooms to traditional wooden houses) used glass for windows. However, it is not known exactly when glass began to be installed on the outside of the Engawa, an edging strip of non-tatami-matted flooring in Japanese architecture. The house designs exhibited at the 1922 Tokyo Peace Exposition had glass windows. Most of the designs at the Exposition were Western-style or hybrid-Western-style houses. "The latest illustrated guide to Japanese and Western style homes" published in 1920 included 41 house-model plans, out of which only one suggested installing a glass door with a sliding door on the outside of the Engawa.

Figure 8. Glass door installed on the outside of the Engawa. West and south side of Rinshunkaku of Sankeien

The oldest remaining example of the glass used in traditional Japanese houses is the one where Moriogai Natsume Soseki lived, which was built in Tokyo in 1887. It is presumed that the building, including the clinic, was built by his parents for his son, a doctor, and it was famous for having been rented by two prominent novelists in succession. However, compared to the original design, the windows and doors using glass were modified or added after construction, and unfortunately the exact date is unclear. However, considering that Japan began importing foreign plate glass in 1899, it is reasonable to assume that the glass doors were added in the 20th century. Another example is the Murakawa Residence built around 1910. It had glass windows on the outside of the Engawa, which was popular during the Showa period (after 1926), but the Showa period style was to store glass windows as they did for shutters (considering the performance and safety of glass at the time). However, the Murakawa Residence did not have a storage type but a fixed glass door, which did

not exist in the housing guidance at the time. It is presumed that this type existed only as an experimental case in certain areas during the Taisho period (1912-1926). The same type of glass door can be found at Rinshunkaku of Sankeien built in 1914 (Figure 8). [19]

From the three cases of houses discussed above, it can be presumed that attempts to introduce glass doors to Engawa started around 1910. However, all three houses were large, upper-class residences, and their designs were uncommon at the time. During the Taisho period (1912-1926), glass doors were only used by middle- and upper-class Japanese people. Hence, it is contradictory to say that such glass doors were being used in houses of the working classes in Korea.

4.3. Japanese Plate Glass Technology

Technical issues might have prevented plate glass from being commonly used in ordinary houses, but the supply and price of these materials were probably more significant. In the history of the Japanese glass industry, plate glass began to be imported from overseas in 1899. This was time foreigners in Japan were being allowed to reside outside designated areas. Therefore, it would be reasonable to assume that it began to be imported as building materials for foreigners' residences.

Japan established its first plate glass factory in 1873 to promote modernization. Engineers from England were hired to begin technical development. The factory continued its research for around 20 years, taking over from government and private organizations several times. However, they ultimately failed in plate glass manufacturing and were dissolved in 1892. In 1900, another challenger took over the same building site but failed with the plate glass system. Ultimately, domestic plate glass production was not successful for more than 30 years. Against this background, Asahi Glass was established in 1907. [20]

Asahi Glass founder Toshiya Iwasaki studied applied chemistry for three years at London University and returned to Japan in 1903. He brought in Belgian machinery to start the glass industry, and plate glass production became possible in 1909. However, the latter was still considered a luxury item, and naturally only the upper classes wanted to introduce the latest building materials into their homes. They obviously did not choose lower quality domestically produced products and instead chose luxury materials.

In Korea's plate glass history, the glass industry began with the establishment of National Glass Manufacturing Center in 1902. However, it was a factory equipped with bottle glass production facilities and was closed during the Russo-Japanese War (it is thought that it was built with the cooperation of Russian engineers). During the Japanese colonial period, domestic glass production was monopolized by their people. The first plate glass production plant in Korea was the Incheon Glass Industry, established in 1953 with

investment from UNKRA and the Korean government. Therefore, if glass was used in Jeonju Hanok Village in 1910, it would have been produced by Asahi Glass.

Even though Japanese glass was not widely preferred, Asahi Glass continued its research and production. Domestically produced glass in Japan began to receive attention after World War I broke out in 1914. Importing glass became difficult due to the war, and domestic products had to be used as a substitute. In 1918, another plate glass manufacturing company called Nippon Sheet Glass Company was established in Japan. Subsequently, technological developments were carried out, and mass production using continuous machine technology began. Nippon Sheet Glass Company succeeded in doing this in 1920, as did Asahi Glass in 1928. [21] With the start of mass production, the production volume of plate glass in the 1930s doubled, and the price was halved compared to the 1920s. By 1935, glass had developed to the point where it was included as a major item in Japan's exports. Considering that glass had already been introduced in Japan's first apartment building, Dojunkai, whose construction began in 1927, plate glass began to be widely used in general housing in the 1930s (at the time, the Dojunkai apartments were the culmination of the latest technology in the form of reinforced concrete).

Asahi Glass was able to maintain technological development and production without going bankrupt for a long time until domestic glass came into the spotlight due to the Mitsubishi company's support (if World War I had not occurred, it would have taken even longer for domestic glass to be consumed). The founder, Toshiya Iwasaki, was the second son of the Mitsubishi Group. In other words, Mitsubishi had intended to develop glass, but it is said that the company name did not include the title Mitsubishi because of the risk of the glass business failing. The glass industry was essential for modernization and was a long-cherished project for Japan, but it had a long history of failures. Even if production succeeded, with regard to the distribution of domestically produced glass (eventually, distribution routes were quickly opened by World War I), Mitsubishi would have had to undertake a great risk. It did not take this risk lightly because the company was established under the name Asahi Glass without the title Mitsubishi. It would not be easy for a company to act like a prophet or to move solely based on an ideology.

4.4. Benefits of Installing Glass Doors in Hanoks

Henceforth, the author's opinion gains strength. Mitsubishi was a company in charge of military supplies under the protection of the Japanese government. One of its important businesses was fighter jets, for which glass development technology was required for making the windows. Thus, it can be assumed that the government's influence was involved in this technological development. It is then understandable that Mitsubishi entered the glass industry, despite great risk, by sending the second son of the group to study abroad. It is possible that consumption in Korea was considered as one of the long-term measures to dispose

of the domestic glass inventory. If glass doors became mandatory for newly built Korean houses after the Japanese annexation, the glass inventory produced by Asahi Glass could have been easily disposed of.

In addition, installing glass on the floors of Hanoks could have provided good data for installing glass in the Engawa. In fact, even in Japan, there were various pilot cases of glass being introduced into housing until the 1920s, and much research was being conducted on housing modernization. At that time, Korea and Taiwan, which were colonies, had many talented architects who wanted to experiment with modern architecture and cities; hence modernized cities, roads, and rural areas were developed. Installing plate glass windows on the Maru would also have provided good data for studying modernized housing.

5. CONCLUSION

After annexing Korea, Japan reorganized the local system according to its standards in order to modernize and reorganize the colonial system. The latter had experienced several epidemics on the mainland and discovered that building regulations were effective in improving hygiene. At the same time, the abolition of the bureaucracy led to a rapid increase in the number of Koreans losing their homes and jobs. Consequently, large-scale housing was needed to accommodate Japanese people immigrating to Korea as well as the formerly enslaved people who became independent of their masters, and hence residential areas were developed.

Around 1910, Korea was faced with two problems: hygiene which had already become a problem in Japan, and crime prevention which had become a problem in Korea. To solve these problems, Japan applied its modernized building regulations and came up with the solution of installing doors on Maru. In addition to solving social problems, this architectural map had two possible benefits. First, the newly developed Hanoks could be used as consumers of the glass produced during the development of plate glass technology that Japan was striving for at the time. Second, a development test of the modern architectural plans could be conducted by installing sliding glass doors in many houses.

In other words, Hanoks' architectural guidance, "the Japanese did not allow houses to be built without glass doors outside of the Maru space," is very likely true.

Modern Hanoks built during the Japanese colonial period are different from traditional Hanoks from 300 years ago. It is generally agreed that this change occurred during the forced modernization of the Japanese colonial period. According to the records of the Dong-A Ilbo, a Korean-language daily newspaper founded in 1920, Korean architects made efforts to propose new residential floor plans for modernization that suited Koreans, and there was the evolution of such modernization processes. There are many ambiguities about

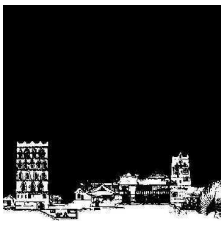
when and where the changes occurred during this process. This leaves modern Hanoks or Japanese-style housing in Korea in a category that has not yet been defined, as described in the author's previous research.

However, the origin of the glass windows installed on Maru, as discussed in this study, represents a stage in the process of change. This was not due to the evolution of Korean culture but was a change derived from the social issues of the time, corporate profits, and new technological research. It was a forced change within a very short period of time and, therefore, can be interpreted as a clear boundary between traditional Hanoks and modern Hanoks. Research on such apparent changes can serve as the basis for defining modern architecture.

NOTES AND REFERENCES

1. Yura Kim "What is ours: Traces of Foreign culture see in traditional architecture built in the early 20th century.", The International Association for the Study of Traditional Environments Working Paper Series Vol 339 Historic Houses (2024.01)
2. Hae-Kyeong Nam, "A study on the characteristics of the housing floor plan in Jeonju Hanok Village.", Journal of the Korean Housing Association, Vol. 21 No.4 p. 139-148 (2010.8)
3. Hae-Kyeong Nam, "A study on the spatial characteristics of the Hanok Plane in Jeonju Hanok Village due to human environment change.", Journal of the Korean Housing Association, Vol. 28 No.5 p. 41-48 (2007.10)
4. "Nihon kindai kenchiku hosei no 100-nen" ["100 Years of Modern Japanese Architectural Law"] The Building Center of Japan (2019)
5. Yoshio Tanaka, "A study on the enacting conditions of "Kenchiku-torishimarikisoku" (Local building code of Osaka prefecture enacted in 1909) – The promotion of building codes system by Osaka Private Association for Sanitation, Journal of Architecture and Planning (Transaction of AIJ), Vol.73 No.629 p.1477-1484 (2008.7)
6. Dai nihon shiritsu eisei-kai zasshi (Journal of Japan Private Hygiene Association) No. 203 (1900.4)
7. Dai nihon shiritsu eisei-kai zasshi (Journal of Japan Private Hygiene Association) No. 202 (1900.3)
8. "Koshu eisei no hattatsu" ["Public health developments"], Japan Public Health Association (Former Japan Private Hygiene Association) p.456-457 (1967)
9. Compilation of Metropolitan Police Department Ordinances and Regulations Concerning Architecture, Year 1905 No.40
10. Compilation of Metropolitan Police Department Ordinances and Regulations Concerning Architecture, Year 1907 No.3(11)
11. Compilation of Metropolitan Police Department Ordinances and Regulations Concerning Architecture, Year 1909 No.25
12. Journal of architecture in Japan Vol.273 (1910.7)
13. Mainichisinbou (Journal published by Government-General of Chosen) 1918.02.07

14. Mainichisinbou (Journal published by Government-General of Chosen) 1914.02.19
15. Mainichisinbou (Journal published by Government-General of Chosen) 1915.01.12
16. Mainichisinbou (Journal published by Government-General of Chosen) 1918.02.03
17. "Koto kenchiku-gaku 13, kenchiku keikaku 1" ["Advanced Architecture 13, Architectural Planning 1"] p.383 (1934)
18. Local building code of Osaka prefecture enacted in 1909 Article 30
19. Kiyoshi Hirai, "Changes in Shutter (Amado) Designs in Modern Japanese Residences: With Historical Explanations from Its Advent to the Completion of an Aligned Sliding Shutters Set in a Grooved Sill and Lintel with a Shutter-box in the Late Middle Ages", Article of Institute of Modern Culture, Showa Women's University, No.875 p.1-33 (2013.9)
20. "Nihon no itagarasu (garasu) kogyo no hassho no shimesu shiryo" ["Documents showing the origins of the Japanese flat glass (glass) industry"], certification of chemical heritage No.10, Chemical Society of Japan (2011.3.17)
21. Katoh Masahisa, Manabe Tsunehiro, "Historical changes of figured glass, frosted glass and glue-chip in Japan until the beginning of the Showa era", Journal of Architecture and Planning (Transaction of AIJ), No.524 p.147-154 (1999.10)



TRADITIONAL DWELLINGS AND SETTLEMENTS WORKING PAPER SERIES

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