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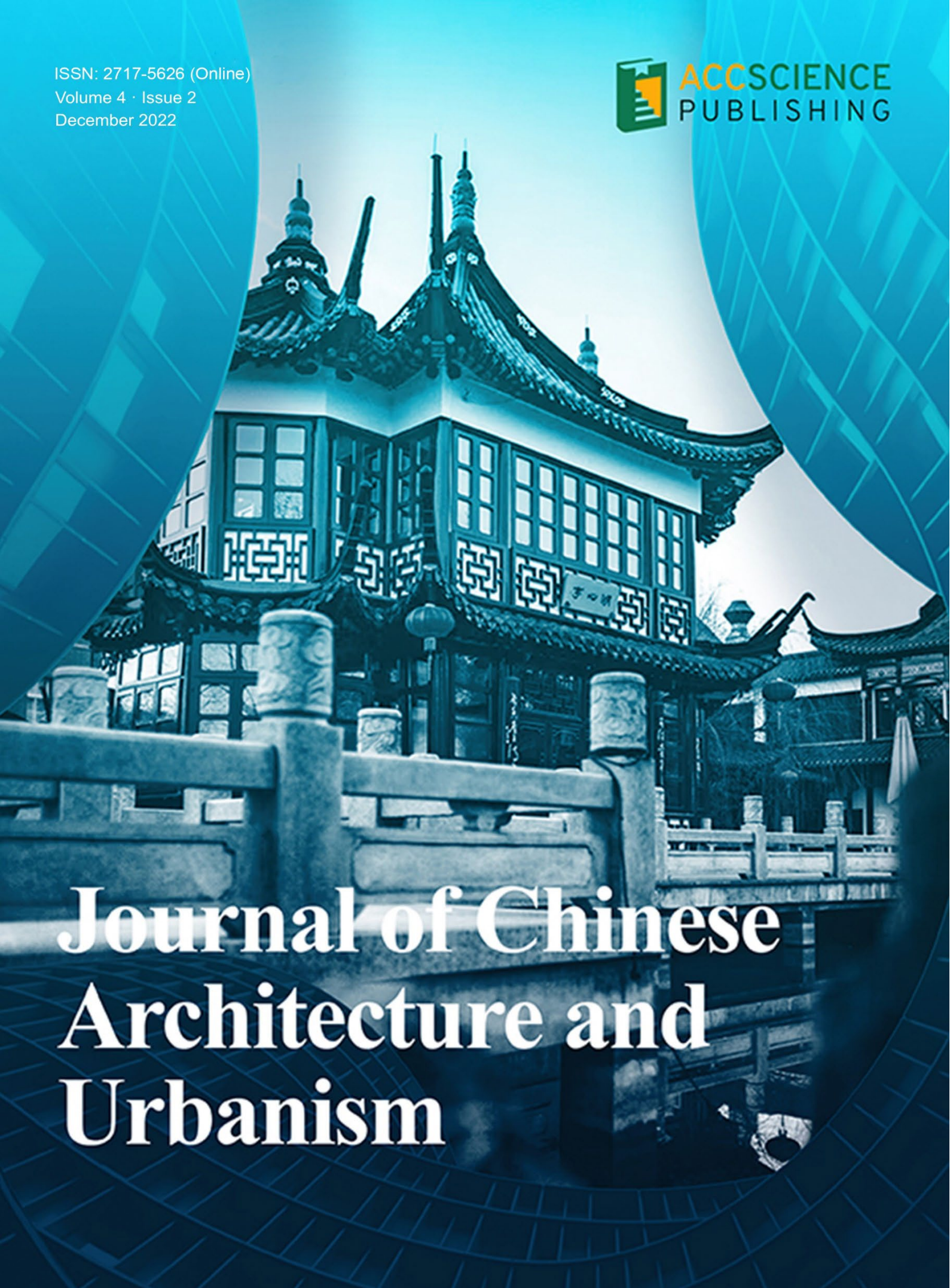

Journal of Chinese Architecture and Urbanism

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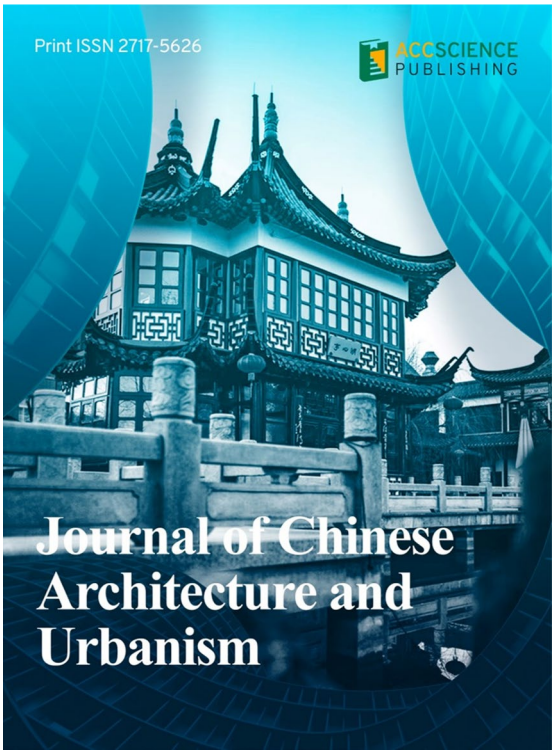

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A typical Chinese-styled building

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Journal of Chinese Architecture and Urbanism

2022 Volume 4 Issue 2: 1-16 *Original Article*

From Plan to Practice: The Revival of Pingtian Village in Songyang County of Zhejiang Province in China

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ABSTRACT

Pingtian Village is located in the northern mountainous area of Songyang County in the southwest of Zhejiang Province, China. It was a typical hollow village since most of its villagers had been out to find jobs elsewhere. Pingtian Village was included in the list of Chinese Traditional Villages in 2014. This small mountainous village, which has almost been forgotten in the urbanization development, has seized the historical opportunity of conservation and renovation of traditional villages and changed its development direction. After several years of planning and construction, Pingtian Village revitalized with new momentum of development.

Keywords: rural revitalization, traditional village, cluster design, China

1. INTRODUCTION

Pingtian village (平田村) is located in the northern mountainous region of Songyang county (松阳县) in the southwest of Zhejiang Province, with a total population of 402, all bearing the same family name, Jiang. The village is only 15 minutes car-ride to the nearest town (i.e., Xiping Town, the county seat). More affluent villagers usually have apartments in the town or new houses in the new village. The historic village has only seniors or impoverished households, who make a living by growing cash crops like vegetables, white tea, and torreya. It is a typical hollowed village. Pingtian was listed in 2014 as one of the Chinese Traditional Villages because it is a representational mountain farming settlement in Songyang county. In the historic village, apart from several new constructions, most buildings are in traditional style, which is characterized by rammed earth walls and tile roofs. The buildings are arranged according to the changing terrain of the mountain, amidst frequent rising clouds and mist. It is a popular destination for photographers and plain-air painters.

As a county under the poverty line, Songyang adopts a poverty relief policy that relocates village settlements outside the mountains in order to facilitate development. Some impoverished villages located deep in the mountains have inconvenient transportation, under-developed economy, and insufficient infrastructure. These villages are planned to be holistically relocated to the plains down the mountain. In Sidu town, which administrates Pingtian village, villagers in deep mountains have all been relocated. The only exceptions are those with relatively convenient transportation and beautiful landscape, including Pingtian, Xikeng and Chenjiapu villages. In the future, they will be managed as closed-off 4A level scenic area, with 5A level being the highest. In the first meeting with the village committee, the villagers' biggest concern was the distribution of relocation quota.

The conservation and development of traditional villages provided Pingtian a valuable opportunity. This small mountainous village that was about to be neglected in the process of urbanization grasped the chance to change its development path. After several years of planning and reconstruction, Pingtian was reborn and revitalized with new momentum of development.

Figure 1. Pingtian Village before the renovation. Source: Photo by Junjie Li

Figure 2. Pingtian Village after 2 years of planning and reconstruction. Source: Yunshang Pingtian Guesthouse

1.1 Rural revitalization in China

In 2012, the Chinese government launched a comprehensive survey of traditional villages. In the same year, selection and verification of the "Chinese Traditional Village List" by experts were carried out. The lag of rural development is the most prominent problem of unbalanced and inadequate development, and the rural revitalization strategy is implemented to solve the development problem [1].

Jicai Feng proposed that traditional villages are another type of cultural heritage, which are both tangible and intangible cultural heritage. Traditional villages contain traditional production and life, and the protection of rural heritage must be overall protection [2]. Qiu Baoxing pointed out that there are many new opportunities for rural development. We should not simply promote rural construction with the model of urban construction and industrial development, but also put forward the countermeasures and methods of rural construction, develop new industries, promote economic development with the pleasant rural living environment [3]. Rural revitalization and protection are not contradictory, but mutually beneficial. The author believes that for the traditional villages, formulating protection measures and improving infrastructure are two key factors, excellent renovation cases are another important factor. There must be exemplary villages and buildings in each village, so that it can quickly form a brand effect and becomes the activation point of the villages [4]. The renewal of Pingtian Village is an excellent case of this development path.

1.2 Traditional villages are strategic resources for the county development

The conservation and reconstruction of Pingtian could not be done without the policy support of Songyang county government. The county has 75 traditional villages like Pingtian, a number ranking very high in the country.

In 2013, the conservation of traditional villages was still an emerging field. However, as early as 2011, Songyang county government was visionary and it realized that the large number of traditional villages in the county was not a burden of economic development, but strategic resources for cultural and tourism industries. The county government explored areas like conservation mechanisms, financial resources, conservation techniques and so on. On the one hand, the government gathered resources from various departments including

construction, culture, agriculture, tourism, and established a "leadership team of conservation and development of historic cities, villages, and buildings" to coordinate the work of conservation and development of traditional villages in the whole county. The leadership team actively engaged in exploring policy mechanisms for adaptive reuse of vacant historic structures and property transfer mechanisms of traditional buildings, which provided policy guarantee to develop new industries in traditional villages. On the other hand, the government also developed technical guidelines for renovation of traditional buildings, which was a conscious move to build local craftsman teams to inherit traditional renovation and reconstruction techniques.

Songyang county has made great achievement in recent years in terms of conservation and development of traditional villages. In December 2014, Songyang county was named among the first group of model counties in the conservation and development of traditional villages, together with Jianshui county in Yunnan province. In January 2016, Songyang county was chosen as the pilot county for the "Save Old Houses" project by the China Foundation for Cultural Heritage Conservation. It was the only one in the country that received support for the whole county. The project promoted holistic conservation of historic structures through a financing model that the foundation and the owner each contributed half of the conservation cost. The planning team of Pingtian published an article in Outlook Weekly, entitled "Understanding Traditional China in Songyang," the team also set the goal for the heritage conservation and cultural development work in Songyang to be a "traditional Chinese model county."

With rich resources of traditional villages, Songyang county formulated a development strategy that introduced guesthouse businesses into traditional villages. The county government enacted "Songyang County Guesthouse Rating Standard" to set specific management measures for different grades of guesthouses. The document also formulates different levels of subsidies according to the accommodation capacity and grading of guesthouses. The renovation of traditional buildings, particularly those listed historic buildings into guesthouses is entitled to higher level of subsidy.

With the large number of traditional villages, the strategy of Songyang county is to focus on selected areas, and use these pilot areas to influence the whole county. The county attaches importance especially to the introduction of high-end resources and branding of public cultural product. Villages retain and develop existing culture and attach importance to cultural construction [5]. Apart from guesthouses in Pingtian village, Songyang has supported guesthouse brands like Red Persimmon (柿子红了), Guoyun Residence (过云山居), Birdvine Residence (鸢舍), Tea Girl (小茶姑娘), Youtian Flower Blossom (酉田花开) and so on, and also incubated cultural projects like Damushan Tea House, Contract Museum, Brown Sugar Workshop, Wangjing Memorial Hall, Shimen Covered Bridge, and Tofu Workshop. Now traditional village tourism has become an important industry and cultural brand of Songyang. The establishment of cultural brands and the planning of art events make Songyang an imaginative scene [6]. These small projects have gradually formed an industry cluster in recent years, making Songyang a top cultural tourism destination in southwest Zhejiang, or even in China.

Figure 3. Guoyun Residence in Xikeng Village, a sea of clouds can be seen here. Source: Photo by Deyin Luo

In terms of the planning and construction projects in Pingtian, the government financed all the projects of public interest and infrastructure, including the construction of the fire pool, modification of electric lines, water pipes and drainage system, safety and disaster prevention projects, improvement of the village landscape, and so on. The government also provided financial support to important cultural and public facilities in the village. Government support can bring the first leap to the revitalization of a village [7]. For example, two facilities that played an important role in Pingtian's development, the Agriculture Exhibition Hall and Handcraft Workshop, were invested by the government, and entrusted to the villages for management and use.

1.3 Village plan: Certainty and flexibility

Village plans are often blamed for infeasibility. Does it mean that village plans are not necessary in the process of rural vitalization? Of course not. Planning plays a different role in rural areas compared to the cities. In terms of the conservation and development of traditional villages, the focus of the village plan and its implementation measures should be adjusted according to the conservation goal and the management mechanism of the village. Most of the traditional villages are facing problems like the absence of industry and the deterioration of infrastructure. The conservation of traditional villages not only needs to conserve the attributes of heritage values, but also needs to protect the right of development of the villagers. It is important to promote conservation through development and empower the village with the capacity to develop, so that the problem of rural decay can be really solved. The most important thing in village revival is to retain local villagers, and to form a sustainable relationship between economic development and traditional protection [8].

Planning should focus on the following tasks. First, current resources, heritage values, and pinpoint attributes should be analyzed. Traditional villages are founded on a traditional way of living and production, shaped by natural environment, and guided by the philosophy of harmony between human and nature. They are formed gradually through a long period of time, according to its own logic of development. Only through in-depth research and study can we formulate heritage values in the plan to serve as the basis of conservation and utilization. At the same time, evoking a sense of cultural identity among the villagers through publicity and education is also necessary, so that the villagers can reach a consensus on conservation and engage in conservation voluntarily. Social cohesion and local identity are critical to the development of villages [9].

The second task of the plan is to set conservation limits and directions for development. The plan should draw on the research and analysis of current condition as well as the industry trend in the future to propose development directions for the village.

The third task of planning is to improve infrastructure and living conditions in the village, as well as to complete safety and disaster prevention facilities. Only when the living conditions in villages are as good as that in the cities, rural lives can be truly attractive.

The core value of Pingtian village is its intact historic environment and the harmonious relationship between the village and its surroundings. The plan needs to holistically preserve the landscape around the village, as well as the historic buildings that are crucial to the traditional characteristics of the village. Family shrines, incense halls, temples, and important Fengshui forests need to continue to serve its traditional functions and be conserved carefully. For residential buildings of relatively low architectural values, the interiors can be adapted to improve the living standard.

In terms of architecture, there are 15 traditional residences in the village that date back from Qing dynasty (1644–1911) to the Republic of China (1912–1949), two of which are listed as historic buildings of Songyang county. They need key conservation measures.

The common characteristics of traditional architecture in the village is hipped roof, rock wall foundation, rammed mud wall, gray or red roof tiles and simple decorations. It shows the lifestyle in Pingtian that is based on agriculture.

The village plan needs to be flexible and adjusts promptly according to the implementation of the design. There are usually problems like property right disputes and specific demand of the villagers. So, it is common to go back and forth several times before making the final decision. Take the design of the parking lot as an example. There was no parking lot in Pingtian. Villagers and tourists could only park along the main road, which greatly hindered the development of tourism. The land of the village was limited by the mountainous terrain and existing built environment. The parking lot needed to be compatible with the traditional environment and it should not block the views. There were no other choices left other than having two small parking areas along the road near the village entrance. One was built by demolishing a chicken farm after the approval from the owner. The other was built by widening the road.

The village society is a so-called "acquaintance society." It is governed by its own logic. Even in a village with decreasing population, the social structure still plays an important role in the planning and reconstruction process. The implementation of the plan must rely on the community. It is crucial to form cooperation between the local government and village leaders. In the case of Pingtian, the investor of Yunshang Pingtian Guesthouse (云上平田), Mr. Jiang played an important role in the process. In history, respected figures who gained status or fortune in the city usually returned to their home village after retirement and contributed to the development of the village. Mr. Jiang is such a figure in modern times. His father used to be the village secretary in Pingtian. Mr. Jiang works in the city but has been greatly influenced by his father and has a deep emotional attachment to the village. When Songyang county initiated the policy supporting the development of traditional villages, he saw the opportunity immediately. As a local villager, he was able to buy and rent a dozen of old houses. During the whole process of planning and reconstruction, he was the major mediator between the designers and the villagers. He also did public services to win support from the villagers. For example, at the beginning of the project, Mr. Jiang paid from his own pocket to renovate a long-abandoned Incense Hall (Ancestral Hall) in the village. He also raised money for the elderly who lived alone with no source of income, and organized visits to take care of them during holidays.

1.4 A small cluster design

Mr. Jiang managed to take tenures of a dozen of old houses. Therefore, the common problem of property right disputes in rural development was solved. Renovating and adapting these houses of various conditions into rural resorts became the starting point of rural vitalization and planning in Pingtian.

In terms of tourism resources, Pingtian village does not have much advantage. It has beautiful scenery and historic landscape, but not unique in Songyang. Xikeng village and Chenjiapu village in Sidu not far from Pingtian are probably endowed with better resources. The area of Pingtian is not large. It only takes about an hour to tour the village, so it is important to create more programs for people to experience and consume. Therefore, the biggest challenge for designers and business owners was how to create attractions for the village.

With the institutional support of the university and social networks, the planning team was able to form a relatively large design team composed of experts and professors from several universities, including Professor Maoyan Xu from the School of Architecture at Tsinghua University, Professor Weijen Wang from the School of Architecture at the University of Hong Kong, Professor Wei He from the School of Architecture of Central Academy of Fine Arts, and Ms Tiantian Xu from DnA Architects. They undertook the projects of

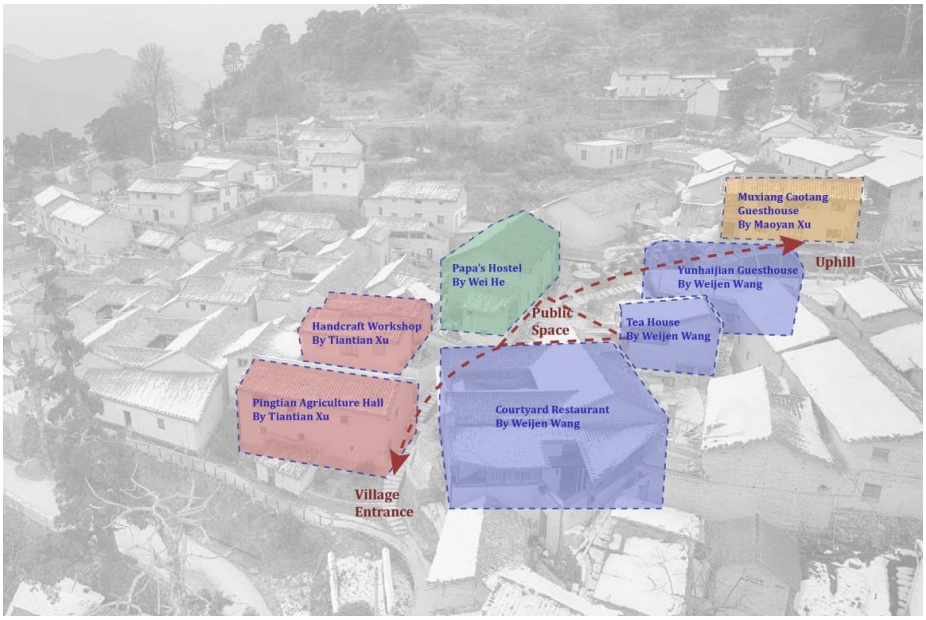

Figure 4. Aerial view of the renovation of Pingtian Village. Source: Drawing by Wen Tang, the original image was provided by DnA Architects

Figure 5. Muxiang Caotang Guesthouse before the renovation. Source: Photo by Junjie Li

Figure 6. Muxiang Caotang Guesthouse after the renovation. Source: Photo provided by Yunshang Pingtian Guesthouse

Figure 7. Interior of Muxiang Caotang Guesthouse after the renovation. Source: Photo provided by Yunshang Pingtian Guesthouse

Muxiang Caotang Guesthouse (木香草堂), Courtyard Restaurant (四合院餐厅), Papa's Hostel (爷爷家青年旅社), and Pingtian Agriculture Hall (平田农耕馆), including a handcraft workshop, respectively. Later, Professor Xin Zhang from Tsinghua University joined the project with his team of lighting designers; the interior design team led by Mr. Haihong Li from Shenzhen also joined. It was unprecedented to have a design team of so many top designers all gathered in the small mountainous village. Gathering the design team was the most important step in the rural development process in Pingtian and was crucial for the project to be completed and later managed with high quality.

Pingtian is a typical agricultural village in the mountains. In order to develop it into a destination for rural tourism, we have to make adjustments in certain places. The plan of the guesthouse area not only needed to consider the function and demand of guesthouse management and tourism development, but also needed to make sure not to damage the characteristics of the village. The plan also needed to leave room for adjustments during implementation according to the demand of the villagers. Mr. Jiang had a dozen of buildings ranging from historic courtyard houses, residential buildings built in the 1980s, to kitchens and small constructions built on different geographical locations. These buildings were different in type and quality and were also constructed in different periods. Designers needed to take into consideration of the location, current condition, and the quality of space and the effect on landscape in order to organize them into an experiential area of rural life with all required functions. The plan also needed to balance short-term and long-term returns and phase the project in a reasonable way. After many rounds of discussions among planners, architects, government officials, and owners, the plan was finalized for the first phase and decided on the functional and spatial arrangement of the tourism facilities, restaurants, guesthouses, cultural exhibitions, and art creation. The plan was fully and thoroughly implemented, with only minor adjustments due to property ownership issues.

Figure 8. Courtyard Restaurant before the renovation. Source: Photo by Junjie Li

Figure 9. Courtyard Restaurant after the renovation. Source: Photo provided by Yunshang Pingtian Guesthouse

Figure 10. Pingtian Agriculture Hall before the renovation. Source: Photo by Junjie Li

Figure 11. Interior of Pingtian Agriculture Hall before the renovation. Source: Photo by Junjie Li

Figure 12. Pingtian Agriculture Hall after the renovation. Source: Photo by Junjie Li

Figure 13. Interior of Pingtian Agriculture Hall after the renovation. Source: Photo provided by DnA Architects

Figure 14. Papa's Hostel after the renovation. Source: Photo provided by 3andwich Design

Figure 15. Interior of Papa's Hostel after the renovation. Source: Photo provided by 3andwich Design

It is important to have enough public spaces in the plan. Public spaces can be created through renovating and improving existing spaces, or by introducing new public architecture. The construction of public space in rural revitalization is of great importance. Public spaces can bring people together, inspire local cultural pride, and allow villagers to regain collective cohesion [10].

Pingtian village used to have little resting places. Walking in the village, one feels like in a cramped maze with the narrow alleys and enclosed rammed earth walls of traditional buildings. In the renovation, several buildings were transformed at the entrance of the village into the Agriculture Museum, the Crafts Workshop and the Designer's Studio, making the enclosed buildings into open spaces for cultural exhibitions and public activities. In front of the Papa's Hostel, there was a triangular patch that was relatively spacious. The space was connected with the café on the first floor of the Hostel and turned into a reception center for the first phase of the project. Architects reshaped the ridge in front of the Papa's Hostel and added landscaping, making it more welcoming and comfortable. A small house nearby was transformed into a semi-open tea house, creating a space for resting and chatting. Therefore, this triangular patch became an attractive public space in the village. It added new functions to the Hostel and enriched the cultural life of the area. It not only met the demand for tourists, but also improved public spaces in the village. After the completion of the café's renovation, it soon became a destination for village elderlies to have chess games, or for designers and government staffs to have meetings.

Figure 16. The Triangular Patch in the center of Pingtian Village, which has become an attractive public space. Source: Photo provided by Haidong Peng

The works of the architects expressed their understanding of traditional architecture, as well as their reflections on rural issues, showing both their personalities and social responsibilities at the same time. With the burgeoning rural tourism industry, the values of rural vernacular architecture started to gain public recognition. The architects were also learning from traditional building design and techniques. Every building renovation project followed strictly the principle of discernibility. In places where intervention must be done, discernable materials was chosen. The design respected the evolution of the village and tried to be creative at the same time. In the Agriculture Museum in Pingtian, the designers tried different types of light wells and glass tiles to create a new architectural language of light and shadow. In Muxiang Caotang, the designer explored a modular method based on the thickness of the rammed mud wall to treat doors and windows on the facade. In the Courtyard Restaurant, the designer concerned more about the relationship between environmental space and natural landscape and used metal materials in the corner of the corridor yard [11], creating an excellent spot for mountain views. The Papa's Hostel did not change much in the exterior, but in the interior on the second floor, the design concept of "room-in-a-room" was adopted to create a different way of living and utilizing space.

The architects did not leave after finishing the design. The model was to combine design, on-site instruction, and creativity of local craftsmen. During the yearlong construction, the designers went to the site for a dozen times to give instructions and cooperate closely with local craftsmen, which ensured the quality of the project and also promoted the inheritance of local craftsmanship. The devotion was also recognized by other professionals. The Papa's Hostel was named winner of the 2016 HD Award by the Hospitality Design Magazine for the category of "Guestrooms or Suites (Economy)," as well as the Silver Award by the A'Design Award in Italy. The Agriculture Museum and Workshop was named First Prize of 2015 Rural Architecture by the Ministry of Housing and Development in China. Pingtian village is now a museum of architectural design. The works of designers are full of

characters, but also in harmony with the village.

1.5 Rural landscape with natural charm

Landscapes play an important role in the cultural, ecological, and environmental fields and can also contribute to local economic development and rural development [12]. Our emotional ties with rural area largely stem from the rural landscape which is full of natural charm. However, most landscape design methods are for urban squares, gardens, or artificial spaces. Landscape design in rural areas needs to avoid "over-design" that damages the natural charm of the villages. Therefore, designers must learn from nature and from the villagers. The work of several renowned designers in Pingtian all used natural landscape in the background to create a harmonious environment.

Landscape designers extracts design elements from the stone walls, vegetable gardens, and bamboo forest, adapted them and used them in the design. For example, the triangle patch mentioned above was designed into a neatly aligned vegetable garden to set off surrounding buildings. Another example is the vacant lot behind Muxiang Caotang. It was transformed into a small theater made of bamboo and was used to hold all kinds of activities.

2. DISCUSSION: PARTICULARITY OF PINGTIAN VILLAGE

China has gradually shifted from high-speed economic development to quality-oriented development, and the imbalance between rural and urban areas has become a prominent problem. Therefore, rural revival and development is an inevitable result, and some villages will inevitably start to change first. The Songyang government is far-sighted very much concerned about rural issues, and strongly supports the renovation and development of the villages. Therefore, Songyang has become a pioneer in rural development.

Since 2012, Songyang County has been committed to the protection and development of traditional villages and rural revitalization. County Magistrate, Jun Wang, has devoted himself to the renovation of historical villages. In 2013, Binlong Jiang, Pingtian-born, returned to his hometown of Songyang. Mr. Jiang's family used to be a village cadre, and he had the courage and ability to be an operator of the project. As a local villager, Mr. Jiang is an extremely suitable person for rural revitalization. The county government invests the fund for rural construction here, so that it can have the reasonable social and economic effects. In the end, Mr. Jiang managed to take tenures of 18 old houses in the village and cooperated with the government to carry out the renovation. Therefore, Pingtian Village was selected as the key village.

The planning team started this project in 2014. At that time, Pingtian Village was just an unknown small village surrounded by the mountains. The village is small in scale, and the buildings are not very delicate. Most of the houses are traditional rammed earth two-story buildings. Although the buildings in Pingtian Village are well preserved and have rich cloud landscapes, the scenery and the history do not stand out from the surrounding villages, which was obviously not attractive enough for outsiders. The conventional rural tourism cannot bring breakthrough development to the village. The renovation of Pingtian Village requires the injection of new functions, reflecting the contrast between modern and traditional, bringing new elements and vitality to the village. So, a group of architects with unique and innovative ideas were gathered in Pingtian Village. Compared with the traditional single-person design, cluster design can gather the collective wisdom. The unique ideas of each architect have brought new possibilities to the development of Pingtian Village. The similar houses have been transformed by different designers, showing different styles, resulting in a very interesting diversity. Collecting a large number of works of well-known architects in a small village, these excellent design works will definitely enhance the popularity of Pingtian Village, attract attention and bring up topics, and then promote the development of the entire village.

As the owner and also a villager, Mr. Jiang is an important figure in the renovation of Pingtian Village. The planning, design, construction, and operation of the project are all supported by the owner. Mr. Jiang took tenures of 18 old houses in the village, provided suitable construction sites, and communicated with the government. At the beginning of the project, Mr. Jiang communicated with the planning team throughout the process, and jointly decided to determine the renovation plan of the village. The solution to the lack of construction experience with modern materials in the village was also due to Mr. Jiang's timely communication, as an intermediary between the designer and the construction team. After about two years of planning and construction, the final renovation showed a better result. As the operator, Mr. Jiang led the villagers to participate in the operation of the village by hiring them and purchasing agricultural products, helping the villagers to improve their living standards and local identity, and truly realizing the revitalization and development of the village.

2.1 Development and contradiction

The 18 renovated buildings were mainly residential buildings. In order to meet the modern needs of new functions, there will inevitably be a contradiction between the protection and renovation of traditional buildings. The county government's proposition is to preserve the traditional appearance as much as possible and protect the authenticity of traditional villages. From the architect's point of view, it is necessary to make small-scale changes to show the contrast between the old and the new, and better meet the needs of comfort. As for the owner, he considers more of economic value, Mr. Jiang tends to support the designer's idea. Architect Tiantian Xu chose a destroyed old house at the entrance of the village and transformed it into the Pingtian Agriculture Hall and the Handcraft Workshop. To avoid the damage to the coordination of the village facade, the exterior wall is not made with large window openings. The skylights of different scales on the roofs bring light into the interior, which improves the lighting conditions of traditional buildings. The Courtyard Restaurant designed by Professor Weijen Wang, ingeniously raised the roof by one-meter, folded part of the roof to form skylights, and partially added some small-scale steel structures and corner windows. This delicate method properly protects the traditional style of the building.

The Muxiang Caotang Guesthouse designed by Professor Maoyan Xu retains the exterior facade of the house and uses wooden materials to renovate the interior. In the original plan, he hoped to add an entrance porch and a roofed balcony on the gable to improve interactivity between the guesthouse and the outdoor public space. This plan was opposed by the government. The government had two considerations: the first consideration was of the authenticity of the traditional architecture; the second was that the government was worried such changes would lead to uncontrollable imitation by other residents, which might cause huge damage to the historic village style of Songyang. Both sides finally compromised, although the balcony and porch of Muxiangtang were built, the interior and the balcony were not connected, which was equivalent to attaching a porch to the gable of the old building.

The Papa's Hostel, designed by Professor Wei He, has sparked a heated debate. Professor He chose Mr. Jiang's grandfather's old house for renovation. He hopes to provide an accommodation space for those young people who come here to paint, and also to increase the diversity of architectural functions in Pingtian Village among many guesthouses, so the function of this building was set as a youth hostel. At the same time, Wei He also proposed to dedicate the first floor to the public, the completely open first-floor space can be used as a public space serving locals and tourists. In the renovation plan of Papa's Hostel, the external form of the building is completely preserved, only a long window is opened on the second floor to bring sunlight, air, and natural scenery into the building. Different from the

cautious exterior design, the interior of the building has undergone relatively bold changes: the partitions in the original building have been removed, and the building has changed from an originally divided room to a large open-planned room. The youth hostel on the second floor implanted three groups of "rooms within room" spatial elements into the traditional house. The "rooms within room" is a living unit of the bunk bed in the youth hostel, each unit can accommodate about six people. These units are constructed of lightweight materials, which can be disassembled and moved. In order to maintain the characteristics of transparent space, the units adopted a new translucent material. The comparison of the new translucent material with the thick earth walls adds visual extension. In addition, translucent materials and casual voids on them can liven up the atmosphere and make the youth hostel more interesting to stay [13].

Figure 17. "Rooms in room." Source: Photo provided by 3andwich Design

The county government has strongly opposed to Professor He's design. The concept of "rooms within room" is a valuable exploration of the renovation of traditional buildings, but the problem of privacy caused by mixing genders and translucent materials has not been solved properly. Obviously, such a design is unacceptable for a village that has just come into contact with modern society. Although the Papa's Hostel was finally built, the county government worried that such a design would have a negative impact on Pingtian village and even Songyang, they blocked the hostel operation on the grounds that the fire protection design was not qualified. The second floor of the hostel has been idle and closed until 2021, when it was gradually converted into a cultural exhibition space.

Public space is crucial for village renovation. At the center of this group of buildings, there is a triangular land, which spontaneously formed a public space with several transformations of buildings and businesses. Before 2014, this triangular land was an insignificant site overgrown with weeds where villagers passed by it every day. Due to the closure of surrounding buildings, it did not become a space for villagers' public activities. The very inconspicuous triangular land was not considered by the planning team at first. After several renovations, the triangular land was surrounded by buildings with different functions, including the Papa's Hostel, Yunhaijian Guesthouse, and Teahouse. The outdoor space and the indoor public space had formed a close linkage, and the public attributes of the triangular land had emerged, becoming the most popular public space in Pingtian Village. The appearance of this public space is a surprise to us. Its development is a spontaneous process, gradually formed in the process of planning and operation. It can be said that it provides a new inspiration for future village planning.

3. CONCLUSION: IGNITING THE SPARKS

The vitalization of traditional villages requires close cooperation among the government, the villagers, and the designers. In order to ensure the long-term development of the village, it is crucial to find new sources of income for villagers beside agriculture. Rural revitalization should always focus on the villagers, develop the local culture and industry to improve the living conditions of the residents [14]. In Pingtian, every stakeholder played their role: the planners set the boundaries for design from the perspective of conservation; the government improved public facilities; the designers ignited the sparks for vitalization. Last but not least, for the sparks to become a fire, it

Figure 18. Ms. Lingfang Wang trains villagers to bake bread in Pingtian Village. Source: Photo by Yaopeng Xu

requires long-term engagement and creativity from the villagers. The team of Mr. Jiang has made Yunshang Pingtian a well-known guesthouse brand in Songyang through relentless effort in these years. The increasing publicity and visitation of the village not only benefited rural tourism, but also made traditional industry like vegetable and crafts more profitable.

New things are still happening in Pingtian. One exciting event is that in early 2019, Ms. Lingfang Wang, Gastronome from Taiwan, and Mr. Xiaopeng Xu, documentary director came to Pingtian, introducing an international platform to the village. They not only opened artist studio in the village with their own teams, but also taught a local villager, Ms. Bao how to bake toast, making this 60-year-old country woman a new generation of "cyber celebrity."

The preservation of traditional village culture was attached great importance in the beginning of the project. During cluster design, architect Tiantian Xu proposed to increase the Pingtian Agriculture Hall as a cultural exhibition space, which not only serves as a center for villagers' cultural activities, but also supports the development of guesthouses in the village as a cultural facility, and has a cultural exchange function. She believes that only commercial projects are not enough for rural development. At present, the construction of guesthouses is the main method of rural development and many rural resources are consumed, so that cultural and public welfare projects could be used as a balance. This is undoubtedly a farsighted judgment, later facts have proved that it has played a very important role in enriching the functional types of Pingtian Village, increasing the stay time of visitors and establishing the cultural image of Pingtian Village. Tiantian Xu also paid great attention to the consideration of social value when choosing the original building. She chose the most dilapidated and least noticed farmhouses in the villages. Although it is not a historical building, it plays an important role in the overall village form of the traditional village and the public space in the village. It is hoped that through the reasonable renovation of this type of house with the worst condition, the possibility of overall protection and sustainable development will be explored.

During the actual operation of Pingtian Village, Mr. Jiang, Ms Lingfang Wang and other staff have undoubtedly boosted the economy and promoted the development of Pingtian Village. However, the consideration of social value in this project is still lacking to

some extent. The relationship between the renovated space and the villagers is alienated, the villagers barely use the new buildings. Besides, there is also a lack of contact with historical and cultural spaces in Pingtian Village, such as the Ancestral Hall. In the future, further adjustments will make up for the lack of social value in Pingtian Village.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Na Sun: Writing – original draft

Deyin Luo: Project administration, Writing – outline & final draft,

Wen Tang: Writing – editing & improving

All authors have read and agreed to the published version of the manuscript.

REFERENCES

[1] Ye X. The general principles of the China's rural vitalization strategy in the New Era [J]. Reform, 2018, 2018(01): 65–73.

[2] Feng J. The difficulties and solutions of traditional villages——Discussion on traditional villages as another type of cultural heritage [J]. Folk Culture Forum, 2013, 2013(01): 7–12. https://doi.org/10.16814/j.cnki.1008-7214.2013.01.002

[3] Qiu B. Basic countermeasures for rural construction in the era of ecological civilization [J]. City Planning Review, 2008, 2008(04): 9–21.

[4] Luo D. Village conservation: The activation of architectural minds as the key [J]. New Architecture, 2015, 2015(01): 23–27.

[5] Ye C, Ma X, Gao Y, et al. The lost countryside: Spatial production of rural culture in Tangwan Village in Shanghai [J]. Habitat international, 2020, 98: 102137. https://doi.org/10.1016/j.habitatint.2020.102137

[6] Luo D, Sun N, Fu Y. The Songyang path of village preservation and rural vitalization [J]. Architectural Journal, 2021, 2021(01): 1–8. https://doi.org/10.19819/j.cnki.ISSN0529-1399.202101001

[7] Li Y, Westlund H, Zheng X, et al. Bottom-up initiatives and revival in the face of rural decline: Case studies from China and Sweden [J]. Journal of Rural Studies, 2016, 47: 506–513. https://doi.org/10.1016/j.jrurstud.2016.07.004

[8] Wang W. The development of ancient villages must maintain the pursuit of authenticity [J]. China Homes, 2015, 2015(12): 26–29.

[9] Lysgard HK. The 'actually existing' cultural policy and culture-led strategies of rural places and small towns [J]. Journal of Rural Studies, 2016, 44: 1–11. https://doi.org/10.1016/j.jrurstud.2015.12.014

[10] Luo D, Tang W. From a village road to public space: Evolution of the triangle plot in Pingtian Village [J]. New Architecture, 2022, 2022(04): 130–135.

[11] Wang W. Three ways for seeing mountain-water through bodily space [J]. Architectural Journal, 2021, 2021(01): 17–25. https://doi.org/10.19819/j.cnki.ISSN0529-1399.202101003

[12] Shen J, Chou RJ. Cultural landscape development integrated with rural revitalization: A case study of Songkou Ancient Town [J]. Land (Basel), 2021, 10(4): 406. https://doi.org/10.3390/land10040406

[13] He W, Zhang X. A new inside for an old Keekwilee-House: Renovation of Papa's Hostel in Pingtian Village [J]. World Architecture, 2015, 2015(11): 90–95+118. https://doi.org/10.16414/j.wa.2015.11.011

[14] Xu T, Wang J. Rural practices in Songyang: Examples of Pingtian Agricultural Museum and Songyang Zhangxi Brown Sugar Workshop [J]. Architectural Journal, 2017, 2017(04): 52–55.

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Multi-Level Housing Governance in Rural Settlement: Transformation of Two Vernacular Houses in Zhejiang Province of China

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ABSTRACT

Vernacular houses are a dynamic complex that assemble multi-dimension variables of time, space, and people. Two governance systems, which are the officials and the people, control the village on different levels, and the spheres of their influences are distinct during different socio-economy periods. In this paper, a multi-level analytical framework is used to regroup information. Three agents are engaged in modeling the issue that each plays a different role in different levels of construction. This paper takes the two cases, the Old Tang House (OTH) and the Sishuishanzhuang Chen House (SSCH) in the Xiaqiao Village (under bridge village) in Zhejiang Province of China to study the transformation process of housing settlement in three building levels. The methods of morphology and typology are used to illustrate and disintegrate the process of housing transformation. Then, a further reading of space is conducted to explain how the hidden agents influence and control the transformation. As a result, a clear hierarchy of governance approaches is proved that the larger the scale of observed space, the higher the order of governance power. What happens in settlement level are always controlled by formal governance, meanwhile, in architectural level are controlled by more informal agents from individuals.

Keywords: Levels, governance, agent, rural built environment, vernacular architecture

1. INTRODUCTION

The vernacular house is a concept of multiplicity, literally and figuratively. On the one hand, it refers to a human habitat with local cultural features where people live that fulfill the basic requirements of accommodation and production. On the other hand, it is a dynamic complex that assembles multi-dimension variables of time, space, and people, in nature. Nothing is constant, things change all the time. Transformations are not the result of a single factor, be it the political or economic one. Indeed, it is the result of a composition of various forces including official and folks. These forces form a housing governance system that is constantly changing, which then impacts different levels of built environment, to different extents respectively.

Housing governance is a management system to control housing practice. It is termed and applied firstly in the context of business and enterprise research. It refers to a series of rules and set of owned responsibilities to regulate the architectural practice that ensure the integrity and effectiveness of the housing system [1]. The concept of governance bridges housing form transformation with the agent groups that control the process that how form generates and changes. The system of housing governance is hierarchical, it engages multiple levels of space and agent groups along the lines of architectural practice. It provides key clues to explore the dynamic mechanism of vernacular housing transformation in detail.

The study of vernacular settlement and houses started from the 19th century. During the 19th century, "vernacular architecture" was used by architectural theorists to refer to rural buildings of the preindustrial era, that were apparently the houses of yeoman farmers and that seemed not to have been "consciously" designed or affected by the intellectual and artistic currents of the Renaissance [2]. The discussion concentrated on discovery and peripheral description of shelter types and people, symbolism, and exotic nature of vernacular forms [3-8].

In the 20th century, a survey of vernacular houses was conducted all over the world, by which various forms of vernacular architecture were recorded [9,10]. Having now a rather complete documentation of vernacular-built environments, researchers focus more on the issues beyond form, to explain how the vernacular house forms are generated from specific physical and social environments [11]. Amos Rapoports demonstrated that socio-cultural factors are the decisive factors that affect house form indirectly. Climate, materials, construction, and technology etcetera, as the directly modifying factors can also alter house forms [12]. Architects and geographers continued to explore the connections between culture and the built environment, depicting variations and distributions of built forms within a particular culture or cross-cultural region [13-16].

In recent decades, research on vernacular houses have increasingly stressed on the dynamic and processual nature of tradition. "The vernacular as process" [17] has been raised clearly that attempts to identify the control and authority in vernacular houses. This idea is fundamental to understand vernacular in this paper that eventually motivates advanced research on the transformation of rural housing development into the context of Chinese vernacular architecture.

Current studies on the transformation or evolution of Chinese vernacular architecture are mainly on the transforming process of spatial structure, and the influencing factors of society and culture behind forms. Scholars studied the transformation of rural settlements in different regions from the perspective of social structure. Duan Jin used topology methods to analyze the spatial structure of historic town settlements in the Lake Tai Basin [18]. By establishing an interrelated research method of traditional space analysis, space syntax, and historical geography interpretation, Yan Ruihong carried out graphic analysis on traditional Chinese settlements to explore the deep structure and evolution of spatial forms [19].

Wang Yun used quantitative methods to convert the traditional settlement space composition into a mathematical model to explore the settlement structure based on the relationship between the data [20]. Wang Yanhui combined qualitative and quantitative methods to sort out the morphological characteristics and evolution rules of rural settlements in southern Jiangsu, and to explore the dynamic mechanism between social and economic development and rural spatial form changes [21].

2. METHODOLOGY

2.1 A multi-level analytical framework

A multi-layered analytical framework is used to disintegrate the village's transformation during different periods. The methodology used in this paper is based on the Open Building Theory, which helps to articulate different functions of various architectural elements and the corresponding design strategies by setting up different analysis levels. In the 1960s, John Habraken defined a whole building entity into two levels, which are structure and infill. The stratification method came into the analysis of production of urban space in the 1990s [22]. According to this theory, the built environment is divided into several inter-influencing levels based on the following hierarchy: conurbation, architecture, indoor space, and infill. There is a relationship between a higher level and a lower one, in that the former provides a setting for the latter. By separating into different levels, a more flexible content can be provided. The multi-layered analysis framework has also been used in urban morphology theory. Conzen developed a method [23] to analyze the urban environment into three levels, street, block, and building [24-25].

Due to the advantages on articulating different built elements specifically, an analysis is conducted with reference to six levels in order to clarify how the settlement and dwellings were transformed and controlled by different governance methods during different socio-political periods, according to different scales of observation [26-27]. Following the sequence from macro to microscope, the six levels are the regional level, settlement level, sub-settlement level, neighborhood level, building fabric level, and infill level.

There is a hierarchy among the six levels. The first three levels are settlement levels, and the last three are building levels. In this paper, only the last three levels of buildings are studied for a precise discussion on housing transformation. The neighborhood level studies the boundary and spatial relations of building groups; the building fabric level studies the form, structure, and functional spaces of the building; the infill level studies the configuration of partitioning, furniture, and equipment inside the building.

By taking the multilevel approach, a synthesized result can be concluded that enhances our understanding of the rural built environment thoroughly, on what had occurred, is occurring, and even is going to happen in the vast area of rural China.

2.2 Research cases

Xiaqiao is a village located in southern Zhejiang province, the mountainous area adjacent to Fujian province [Figure 1]. In this paper, two vernacular houses with traditional forms in Xiaqiao Village, the Old Tang House (OTH) and the Sishuishanzhuang Chen House (SSCH), were selected as comparative case studies, in order to explore the transformations of these houses and the governance controlling them.

The spheres of their influences are distinct during different socio-economic periods. This paper attempts to explain the dynamic process of transformation happening in the rural built environment of China in recent 400 years. It contains four socio-economic periods representing the different development stages that are the Qing dynasty (1616–1911), the Republican China (1912–1948), the Planned Economy PRC (1949–1977), and the Market Economy PRC (1978–2016). The transformation of the whole settlement provides the context to understand the transformations of the two houses [Figure 2].

Figure 1. Location of the Xiaqiao Village, Zhejiang Province, China. Source: Drawings by the author

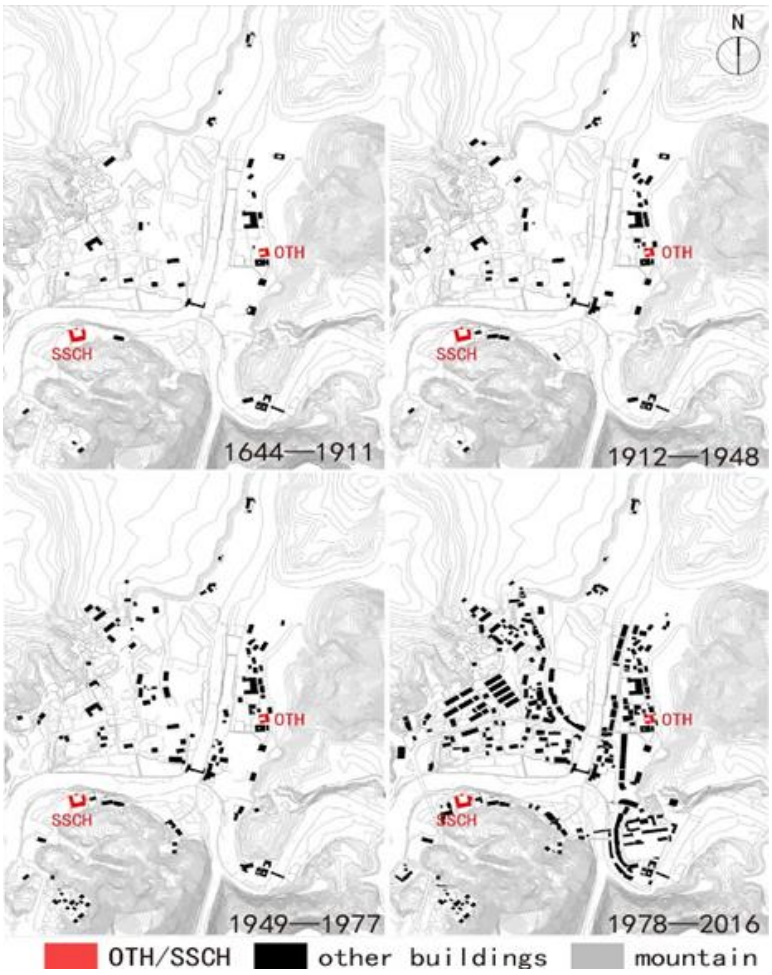

Figure 2. Transformation of settlement patterns. Source: Drawings by the author

3. HOUSING TRANSFORMATIONS ON DIFFERENT LEVELS

3.1 Neighborhood level

The neighborhood level is the first level focusing on building. In this level, the combination of one group of buildings is the research object. It explores how a building co-exist and interact with its neighborhood. It reflects the radical root of lifestyle and living mode. The neighborhood level is used to discuss the relationship between a building and its surrounding built environment. Thus, the term of neighborhood here is used to define the buildings that obviously belong to a certain cluster.

The two houses, OTH and SSCH, are built in different periods of the Qing dynasty. They both belong to the category of traditional dwellings. Thus, they share similar features of courtyard houses, following similar rules of traditional construction system. However, due to the different

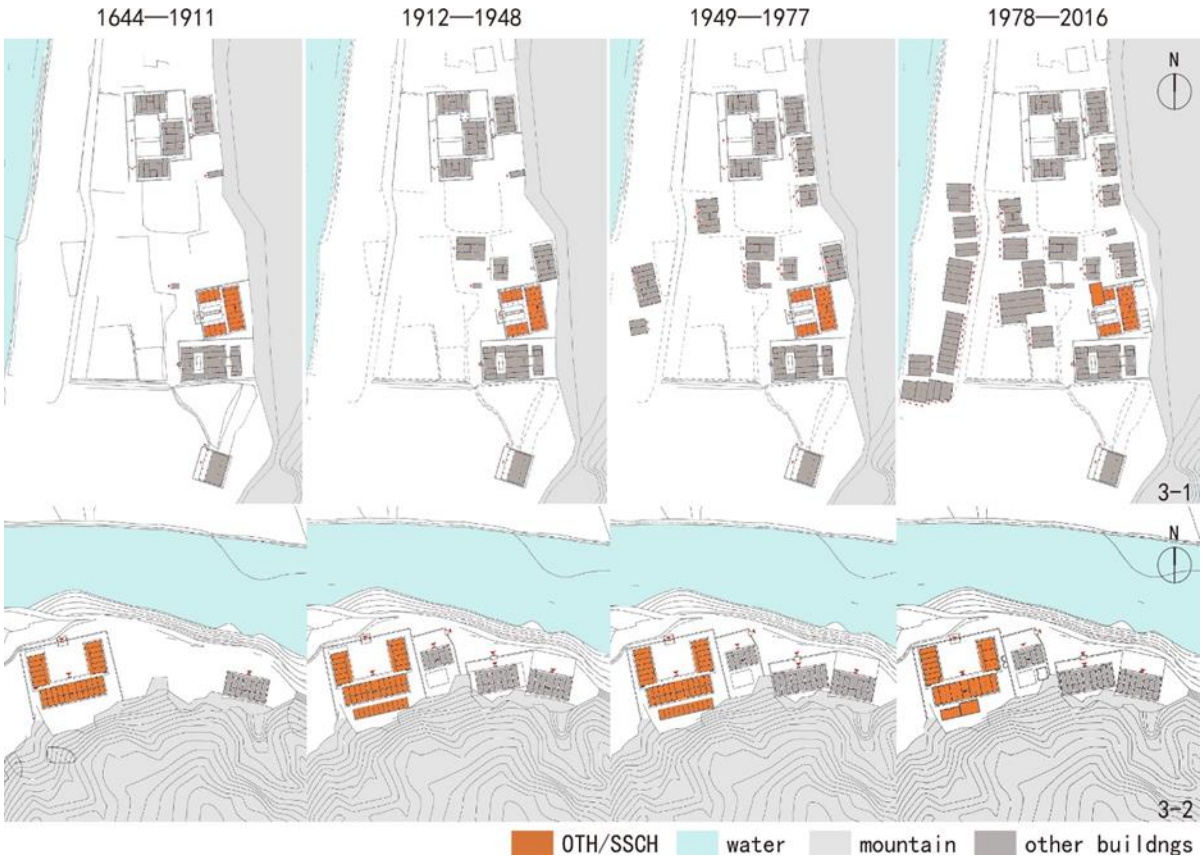

Figure 3. Transformation of neighborhoods (3-1 Neighborhood of OTH; 3-2 Neighborhood of SSCH). Source: Drawings by the author

conditions of land and different requirement of families, in the neighborhood level, the two buildings show different features [Figure 3].

(i) General situation

Due to the increasing built density, the spare spaces around OTH have been encroached into small buildings, and most of them are residential. Due to the ownership of homestead, most buildings around OTH belong to different families of the Tang lineage. There is only one plot that is still owned by the Houchi (后池 rear pond) Lin lineage. The general situation of the neighborhood surrounding OTH inherited the features from the settlement level.

The situation of SSCH is different from that of OTH. Instead of a complete plain on the riverbank, SSCH is located on the slope of the Nanshan Mountain. The area of the suitable lands that are rather flat for construction is limited. It limits the scale of construction and the quantity of houses there. Instead of small fragmented houses built by small families moving out from the big house, four complete courtyard houses occupy the field of Nanshan. Besides, this field is mostly developed during the late Qing dynasty to the early Republican period. After several big houses have occupied the area, new movers can only build their houses in other fields outside this neighborhood.

(ii) Entrance

For the neighborhood of OTH, along with the increase of new buildings, new alleys were created spontaneously by dividing buildings, and more entrances appear along these alleys. But the entrances were not set randomly. Instead, the entrances are always kept in the same orientation. The direction to go inside the building or building group is from west to east.

The entrances of all the houses in the neighborhood of the SSCH mainly depend on the orientation of mountains.

The courtyard houses here are arranged parallel to the mountain contours. Thus, the entrances of three of the four houses are facing the front river. But the orientation of entrance in traditional Chinese houses is a complex result of various considerations including *Fengshui*, wealth accumulation, geographical conditions, and many more. In this neighborhood, the courtyard gate of the Republican house separated from SSCH rotates towards the east to avoid facing the gap of the opposite mountains. It was the personal preferences of the family who lived in the house and who based on geomancy.

(iii) Orientation

In this neighborhood, the orientations of all the main buildings were kept the same during the four periods. For the OTH, all houses face the west where the Beixi Stream (北溪, north stream) flows, and where the Nanjiangjun Mountain (南将军山, south general mountain) stands. For the SSCH, all houses face the Xixi Stream (西溪, west stream), with the mountain at the back. However, the wing buildings in the courtyard house have different orientations due to the courtyard layout. But from the overall perspective of the courtyard house in these two cases, all houses in the neighborhood still have the same orientation.

3.2 Building fabric level

The building fabric level involves the study of the spatial structure of buildings as one group. Three parts are discussed, including the envelope that encloses the interior of a building, the structure that bears the load of a building, and the combination of building groups.

The construction of houses in rural Taishun is based on the spatial unit of *liu* (榴, a file of space). A *liu* is a unit of dwellings both in terms of space and construction in the Taishun county. It is a word in the local dialect equaling to 'bay' in traditional Chinese architecture terminology. It refers to the space between two rows of columns from front to back.

(i) Enveloping

Both these two houses were built in traditional style using traditional construction material of wood. The buildings are covered by wood panels. Most of them are attached with additional wooden doors while the original traditional styles are retained for the windows. Although the accurate time cannot be ascertained, most of the doors, windows, and wood panels were probably repaired and replaced several times throughout the lifetime of the building, something like a daily maintenance of the building.

The envelope of the SSCH has changed little indeed. Glass windows are added in the middle of the second floor where the original space is open directly to the outside. However, comparatively, the transformation of the envelope of OTH is more apparent. In the OTH, its end *liu* of the right-wing building has been pushed forward. It extrudes from the original place. This change has been made by the male owner in 1990. After 1990, the children of the old couple moved out and built their own houses. Thus, the living space seemed to be spacious to the old couple. Considering the convenience of living, the old man revised the end *liu* by moving the stove from the back to the front. Meanwhile, the front wall of the end *liu* was pushed a step forward to create a better entrance going inside the room.

The major change of the building's form happened on the left-wing building. The end two *liu*s was rebuilt into modern style in 1996–1997 after the old structures have been destroyed by flood. The form and material of the new parts transform drastically and radically. The doors and windows built for the new dwellings are distinct from the traditional ones. The gates are made of metal, and the windows are made of glass with a steel grill outside for safety

purposes. But it is interesting that the gates are still in a four-panel style which is the same as the traditional one.

(ii) Structure

In terms of the general structure, traditional wooden structures of these two buildings were kept the same during the four periods. The logic behind constructing a wood column-beam frame structure is to form a frame that bears the load of the whole building by columns as vertical components and beams as horizontal components. In this kind of structural system, the structural constructions, such as the columns and beams, are totally separated from the infill constructions such as the partition walls.

The major structural components in the traditional construction system includes column, beam, purlin, rafter, and *Dou-gung*. Basically, the columns and beams have not been changed since it was first built. They constitute the fundamental framework of the building. They are always built with solid wood that is dried for a long time and coated with Chinese wood oil to prevent moths and rotting. It is the reason why the major structure of the building can weather different climates for a long time.

Comparing to the major structural elements, the decorative elements in the structure that bear little load were replaced more often. For example, the side *Dou*s (斗) in composition of *Dou-gung* are easier to be lost or replaced by a new one. The same situation happens on other decorative elements in the structural system, such as *Queti* (雀替). In the major part that bears great load, subsidiary construction is added to assist supporting the upper structure. For example, at the corners of the building, a wooden stick is added to the beam to support the overhanging purlin.

The rafters and purlins support all the tiles of the roof directly. They are easier to be corroded by rain, or damaged by strong wind. Thus, rafters and purlins experienced more frequent repair and replacement compared to other structural parts.

Without affecting the stability of the overall structure, part of the structure can be changed according to the changing functions. For example, part of the structure of attic on the second floor has been removed. In the original structure, all the beams were completely connected to the adjacent two columns. It was a typical form of the second-floor structure in the early Qing dynasty. In the late Qing dynasty, the structure had transformed in that the beams on one side had been removed to create a rectangular entrance going inside the attic. Then, in order to facilitate the usage of the attic more efficiently, this part of structure of the building built in the earlier stages had been reconstructed as well that the beams on one side had been removed to create the entrance.

(iii) Combination of building group

Both the OTH and the SSCH have a three-section compound layout (San-he-yuan, 三合院). It is constituted by a courtyard gate, a main building, and two wing buildings. The main building and wing buildings are connected through the roof and platform, making a U-shaped overall layout.

However, the OTH and the SSCH represent two typical cases of traditional courtyard houses built in the early and the late Qing dynasty, respectively. The earlier Qing courtyard houses are much smaller than the later ones. For example, in the earlier courtyard house of OTH, there are 15 *liu*s in total; 7 *liu*s for the main building, and 4 *liu*s for each wing building. But comparatively in the later ones, there are 23 *lius* in total, containing 11 *liu*s for the main building, and 6 *liu*s for each wing building. Due to the enlarged courtyard space, the late Qing courtyard house represented by the SSCH has a larger and much more spacious front yard than the earlier one represented by the OTH. The causes of

the enlargement of courtyard was by the social development and the specific situation of the tenant. On the one hand, along with the development of social productive forces in the late Qing dynasty, the folks got wealthier, and the population increased as well. Thus, there were real needs to build a larger house comparing to the early Qing dynasty. On the other hand, the financial status, family population, and the social status of the family, determined the size of the courtyard house.

In terms of the overall layout, both the major patterns of these two houses have remained the same. But several changes have been made respectively for the two different cases.

(iv) Transformation of building combination of OTH

For the case of OTH, there are more obvious changes based on the lifestyle and daily needs of the owner [Figure 4]. During the Qing dynasty, the major part for residence remained the same. But due to the needs of daily life, several functional components were constructed. These components included places to store debris, raise livestock, or toilets. They were more easily damaged and had been rebuilt many times due to their temporary structures and rustic building materials.

During the Republican period, the population grew beyond the maximum capacity of accommodations. Residents, again, started to move out. But, in the Republican period, there was insufficient suitable land for construction, thus the scale of moving families was smaller. The continuous turmoil caused a decrease in the accumulation of wealth as well as the determination to build bigger houses for newer generations. Thus, attaching living spaces grew at the back of the courtyard house. It is the Sancenglou house (三层楼屋, three-floor building), the only building higher than two floors before 1980s in the village.

During the period of planned economy, the whole pattern of the OTH was retained. The economic conditions limited the probability of construction, and the ideology encouraged collective activities instead of construction of houses for personal needs. Only a simple even rustic house was built at the connection part between the back courtyard and the Sancenglou building. It was unavoidable due to the urgent need for accommodation.

After entering the period of market economy, the whole society experienced great changes both on tangible and intangible aspects. Two major changes were made after the 1980s. Firstly, the Sancenglou house was burned in the 1990s. After that, the new houses were built gradually on the same site. Secondly, the front half of the left-wing building was destroyed by a flood around 1996. It has been rebuilt into a modern style after that. Both the new buildings built on the two sites do not rely on traditional wooden structure. Instead, new materials of modern architecture such as brick, concrete, and steel, were used as well as new construction techniques, brick structure, reinforced concrete structure, and the mix of the two.

The construction of the new buildings changed the pattern of the neighborhood of the OTH. Firstly, it cut off the direct connection between the OTH and the Sancenglou house that was previously connected. The new houses built on the original site of Sancenglou partly detach from the old house due to the differences of structure and the field of homestead. Secondly, the new house built on the site of the left-wing building is partly independent from the entire courtyard house. It has its own entrance to go inside the house from the outside without having to pass through the courtyard. As the new building is taller, combined with the modern cladding façade, the new house can be well differentiated from the old one.

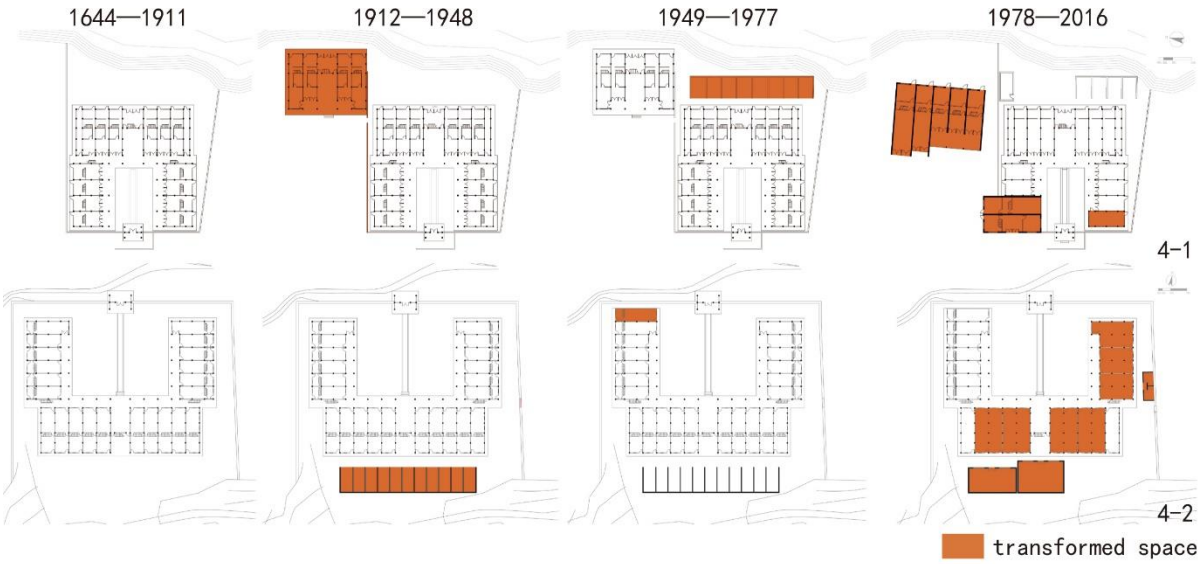

Figure 4. Transformation of courtyard houses (4-1 Courtyard houses of OTH; 4-2 Courtyard houses of SSCH). Source: Drawings by the author

(v) Transformation of building combination of SSCH

The SSCH was built in the late Qing dynasty. The building group remains the same during this period as the OTH. Due to the late construction time, there was no urgent need of expanding the original courtyard house caused by the rapidly increasing population. Besides, similar to OTH, the continuous renovation and rebuilding of the additional functional components are common to see in everyday life [Figure 4].

During Republican period, big families started dividing. Due to the limitation of land in the neighborhood, most of the residents moving out built houses in other areas. Only one family could build their new house next to SSCH, due to the allocation of land property. Generally, this new house would be an independent courtyard completely separated from the SSCH. It stands outside the building group of SSCH. But a side courtyard gate in the back yard still explains the invisible connection between the two houses.

During the period of planned economy of PRC, an additional *liu* has been built at the end of the left-wing building to enlarge the living area of the house. However, the overall layout of SSCH did not change much. The greatest transformation of SSCH building group happened at the fourth stage, the period of market economy of China. The entire building group changed radically from space to function. In 2010, after the establishment of the Corridor-Bridge Cultural Park, which is when the Xiaqiao Village planned to develop tourism, the owner of SSCH renovated the house, turning it from pure self-residential space into a restaurant plus hostel for tourists. In view of this situation, the transformation of SSCH in this level mainly shows in the construction of service rooms, kitchens, public washrooms, and more storage spaces. These components are built in the accessory spaces, such as the back courtyard, and the side courtyards at the back of the two wing buildings.

3.3 Infill level

The infill level is the observation of the building at microscopic level. It focuses on the interaction between human beings and the building on a daily basis. There are two parts that are discussed under this level, which are interior walls, the non-structural partitions and decorations, and the indoor setting and space from the perspective that takes the role of usage and function of a building.

(i) Partitioning walls

All the interior walls of the traditional houses do not bear the load. They are only wooden panels used to divide spaces from outdoor to indoor, from others' to one's own. The wooden panels are very thin (less than 10 cm thick). The panels have directions, along the depth and the width, both having different functions. In common, the former is used to divide spaces according to ownership, and the latter divides spaces according to functions. To explain further, the panels along the depth differentiate the spatial cell from others' to one's own, and those along the width differentiate space from bedroom to kitchen.

For both of these cases, indoor panels have been changed to reallocate the spaces to meet the changing requirements of the locals based on their daily lives. Some panels were removed, some were added, some were renovated. In the OTH, the panels along the depth have not changed much. The form of space using *liu* as unit has been kept until now. But the panels along the width have been extensively modified, especially in the recent decade. At present, most of the panels in this direction have been removed. In one cell, there are three panels along the width. These panels divide the whole cell into four spaces that are a living room at the front, a bedroom, a staircase, and a kitchen at the back. It is the most efficient approach to maximize the use of the residential space to fulfill all the needs in daily life. However, along with the residents moving out, those who are still living here can occupy more spaces. They do not need to divide the space so carefully. In fact, the narrowed living spaces cannot satisfy the requirement of modern people who pursue capacious indoor spaces with better sunlight and ventilation. Thus, except for the one that separates the kitchen from other spaces, all the other three partition panels have been removed, at least for the *liu*'s that are still in use.

But in SSCH, the panels along the two directions have been greatly altered. The width-direction panels have all been removed; meanwhile, the depth-direction panels have been removed for every two *liu*s. They all aim to create bigger spaces as dining rooms.

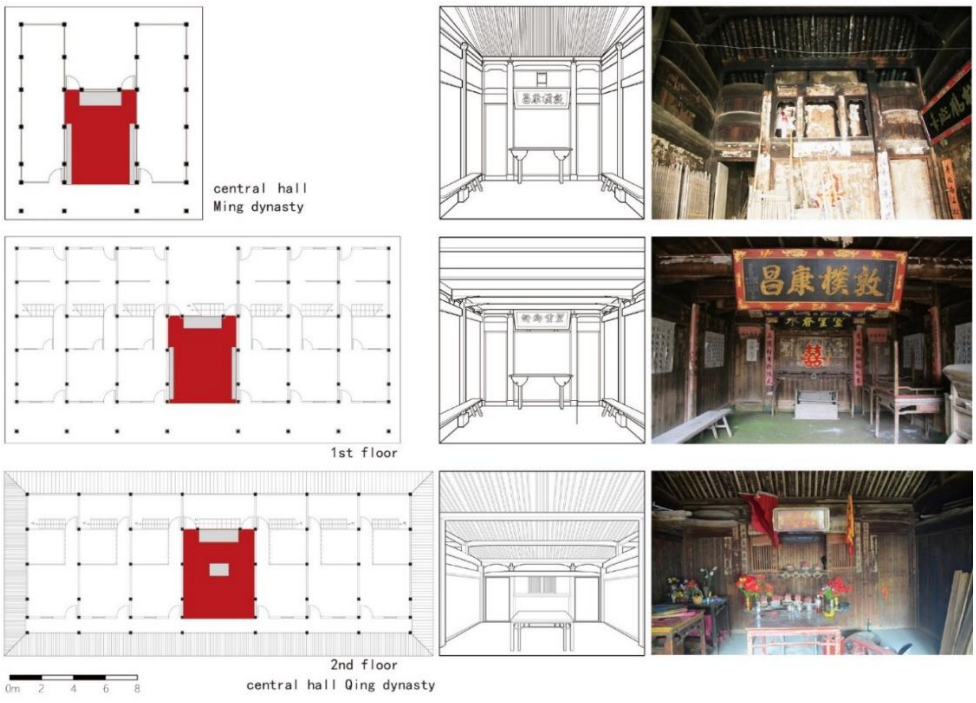

Figure 5. Central Hall in Ming and Qing dynasties. Source: Drawings by the author

(ii) Central hall

The transformation of indoor settings and spaces responds to the changes of daily life. In the traditional living customs, the house can be divided into gathering spaces and private family spaces according to their respective functions. The middle cell of the main building is used as the central hall for big families who are living in the house [Figure 5]. The gathering space is where family events are held, like weddings, funerals, housewarming, birth of a baby, and many more. In common days, the hall provides spaces for residents to chat and communicate. But nowadays, the gathering function of this space has been greatly weakened, and even replaced. With the original residents building new houses outside and moving out, the central hall has been out of use and gradually lost their role as the spiritual core in the house. Hence, it has transformed from a core space to a leftover space.

In the OTH, the central hall is always empty, sometimes, some residents leave their farm implements there. Due to the transformation of ideology, the center hall on the second floor is no longer used to conduct daily religious rituals.

The situation in SSCH is different. Most of the spaces in this house have been turned into hostels and dining rooms, only four cells remain as residential spaces for the villagers. Besides, the central hall of the house has also become a reception space for customers. This space is now used to showcase the vernacular living style for outsiders.

(iii) Private cell

The function of private cells (*lius*) has undergone greater transformations [Figure 6]. Due to the loss of current residents, some private cells in the OTH are desolate and are stacked with old junks. The others that are still in use have been arranged differently compared to the original layout. The panels on the first floor have been removed except the last one that separates the kitchen and the front space. Then, a big space is created at the front that is used as a dining room, and to store sundries and farming instruments. To avoid humidity and to allow more privacy, the bedrooms are located on the second floor. In the SSCH, the private cells are turned into hostel as accommodations for travelers. The indoor space is opened up to meet the needs of urban lifestyle.

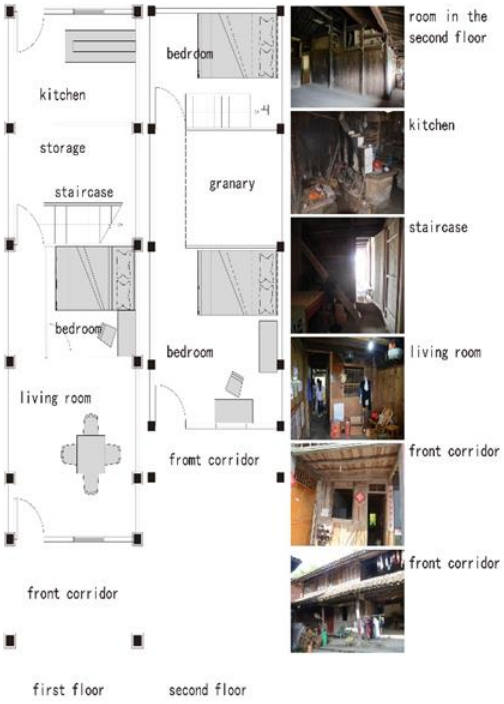

Figure 6. Living cell in traditional buildings. Source: Drawings by the author

Generally, the spatial hierarchy has been changed. In traditional dwellings, a clearly dominant-subordinate relationship exists that the central hall takes the core role in the whole house that occupies a larger space compared to the other *lius*. The rest of the living cells used to be paralleled, with similar sizes and spatial arrangement. But now, the dominant-subordinate relationship between the central hall and private cells has been changed. Along with the collapse of traditional big family, the core role of the central hall has been eliminated.

The progressive relationship of space in the private cell has disappeared as well. From the front to the back, the space is now integrated as a whole instead of several parts with different functions.

4. GOVERNANCE HIERARCHY: AGENT OF CONTROL

Governance hierarchy explores the relationship between the two major dimensions of the built environment: space, and people. The term people here mainly refers to the governance agency groups which has regulatory powers to change the corresponding spaces, but it also relates to other stakeholders who have similar interests. In the same way as with the different spatial levels, the governance agents also have levels based on social status, and these are government entities with formal administrative responsibilities, institutions and organizations, and every individual resident who is living in the specific space. This helps to understand the public-private partnership in spatial formation with different levels [Figure 7].

4.1 Governance hierarchy

The governance of the housing settlement that controls the transformation of the built environment in different levels has clear hierarchies. Two systems govern the village, which are the administrative management as a top-down system, and the self-management by the villagers as a bottom-up system. These two systems control the village on different levels, and the spheres of their influences are distinct during different socio-economic periods.

Besides, three forces are engaged in modeling the built environment. They are the government, the individual (family or each villager), and the intermediate organizations. The state and the individual are the two poles of the society. The former represents the official ideology that controls the society, and the latter represents the daily life of real people. They play different roles at different levels of construction. An intermediate organization acts as a transitional status between them, it acts as a bridge between the local government and individual villagers. Different groups play this intermediate role in various periods. For example, in Imperial China, the lineage was responsible for communication between public and private; and in planned economy of the PRC, this role was played by the production brigade. Moreover, the changing contexts of the tangible and intangible environment on society, economy, politics, culture, and technology caused corresponding changes in

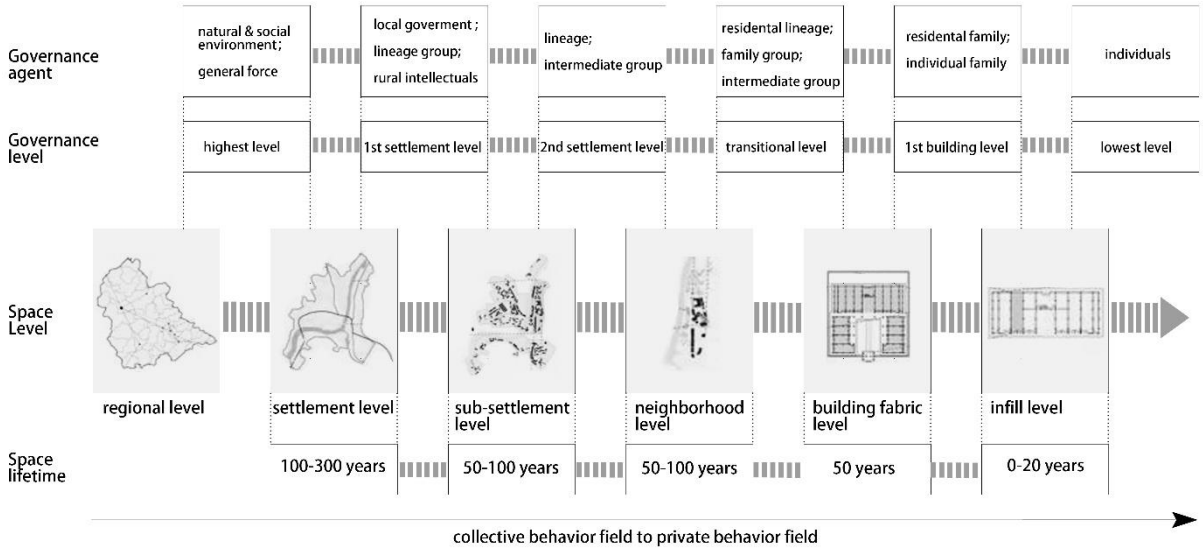

Figure 7. Governance hierarchy in different levels. Source: Drawings by the author

these two controlling systems and led to a series of contradictions between them in different periods. This may be the key to understanding the transformation of the built environment in the village.

The higher level (like the settlement levels) implies the general trends of rural development that are controlled more by the governmental powers. It is the result of collective behaviors. Meanwhile, the lower level (like the infill level) indicates the way of the ordinaries' everyday life, which depends more on personal experiences. Furthermore, a hierarchy is implied in the six levels that higher levels can influence the transformations on lower levels. However, the delivery of impact is one way that the lower ones can do nothing about the higher ones.

4.2 Transformation of spatial features and governance system

The organizational form in the grass-root society of rural China has changed greatly in the past 400 years, from the Qing dynasty to contemporary times. A sophisticated management system had been established by the local villagers themselves in premodern times for hundreds of years. However, the self-governance system has been broken by the transformation of ideology during the Maoist period, a socialist type of production brigade replaced the traditional self-governance system in rural China.

The grass-root society in the Qing dynasty and the Republican period in rural China belonged to the traditional social formation. It lasted for hundreds of years in imperial period and was kept during the Republican period. The political powerholder has been changed over for several times, and the bureaucracy fell into chaos among the high official departments, whereas the rural grass-root society has not changed much. The organizational formation and management approach of villages in the Qing dynasty have been inherited in Republican period. The social structure in rural China was retained, and the rural governance system continued.

Family is the basic unit of everyday life and social production in an agricultural society. It refers to a group of relatives with closed blood relations who live together and share common wealth to some extent. During the premodern times, there were three major types of family: nuclear family, linear family, and extended family, corresponding to different family structures. Nuclear family has two generations containing a couple of adult parents and their underage children. Linear family has three generations containing grandparents, parents, and underage children, all the nuclear families from the same grandfather can be included. Extended family can include the couple and their married sons or even other relatives.

Home and country isomorphism is an important feature of Chinese society during the premodern period. The relationships among people were basically extended by the family in the context of agricultural society connected by blood relations, which led to a political system with family as a basic unit.

Instead of a formal government department, village as the unit cell of Chinese rural society has been governed by unofficial groups. The lowest level of official administrative department is the county level. Below the county level, all the rural communities, such as town and village, are operated by nongovernmental organizations.

A lineage group, as the coalition of families, was responsible to rule the village in which they lived. In the rural society during the premodern times, the families bearing the same surname and sharing the same ancestor could trace back their constitutive lineages. Both these two terms can be used interchangeably to refer to a type of patriarchal organization [28-29] in China. The individual families belonged to the same lineage group did not necessarily have strong blood relations. Sometimes, some family groups who shared the same surname and lived in neighboring areas united for mutual interests.

However, they would try to manufacture a common lineage history to trace to the same ancestor, making an imagination of family

origins to strengthen the legitimacy of their lineage. Thus, from this perspective, lineage is a 'cooperation' type of organization grouped and operated spontaneously by the villagers themselves in the local community.

Under the home-country structure, the state power and family power are co-dependent. This relationship determines the scramble for the public power of the village by the big lineage group.

The rural intellectuals are the representatives of effective implementation of management by the lineage group. There is another system working in parallel with the lineage system, the rural intellectuals. The grass-roots society in the Qing dynasty consisted of mainly three parts: officials, rural intellectuals, and the ordinary people. The class of rural intellectuals is the intermediary between the bureaucrats and the villagers. During the Ming and Qing dynasties, "national power cannot go below the level of county. The lineage group is the management class below the level of county. All the lineage groups are operated by themselves. The self-governing system produces the local ethic. Local ethic produces the rural intellectual group [30]." (国权不下县，县下惟宗族，宗族皆自治，自治造伦理，伦理造乡绅；*guoquanbuxiaxian, xianxiaweizongzu, zongzujiezizhi, zizhizaolunli, lunlizaoxiangshen*) The rural intellectuals was the only group that could legally represent local communities and government officials to discuss local affairs regarding political issues of the group. Under the rule of the empire, the management of the administrative agencies had not yet penetrated the village, and the unique power of the lineage had maintained the stability and order of the countryside.

According to Vivienne Shue's research [31], in traditional central societies, there were in fact two kinds of order and power: one was the official order or national power; the other was the local order or folk power. The former was centered on the imperial power and formed a graded trapezoidal structure from the top to the bottom; the latter took the lineage family as the center and gathered in a natural village of large or small groups. Each lineage village was a natural "autonomy," like a honeycomb-structure.

There are three kinds of spaces with different hierarchies existing in the village's-built environment, which are family space, lineage space, and common space. Family spaces are the spaces owned and used by the same family as an independent living unit, which are referred to as the private dwellings. Lineage spaces are the spaces owned by the same lineage group as a cluster of families with the same surname and blood relationships, which always refer to the ancestral halls. Common spaces are the spaces shared by the public, which always refers to the bridges and temples.

Family spaces are built by the family members themselves, but the location of the spaces can be controlled by the lineage. Lineage spaces are built by the lineage members and is always initiated by the lineage representative. Common spaces are built by the joint forces of the public, but the built activities are organized by the rural elites.

In December 1978, the Communist Party of China held the Third Plenary Session of the Eleventh Central Committee. It signaled that the Chinese society had entered a new era of reform and opening up. The most direct manifestation and means of the state's effective control over rural society was that the state power system was established in the rural society. In a traditional rural society, this kind of state power was expressed as imperial power; in a modern society, it is directly represented as political power, with the highest authority being the national administrative power. After the national administrative system was sunk to the township during the Republic of China, it was the township government that directly represented the country in rural society. In the new era, with the abolition of the people's commune system and the establishment of the village governance system, the form and scope of the state power have also undergone great changes. The "township government" system has been established by certain administrative divisions: the country's most basic administrative power system. In other

words, the township has become the border between the country and society. The authorities whose power is higher than the townships directly represent the administrative power of the state and belong to the category of the state. The organization or administrative division below the township does not have the nature of the state administrative organization and belongs to the category of society.

In the new period, township officers have a clear bureaucratic structure. Their behavior directly affects the development of rural politics. The township cadre system is composed of two major rules of identity and rank. Township officer mainly refers to the staff of the township regime. According to the sequence of posts prescribed by the national recognition system, towns and townships generally belong to the *ke* (科, department).

In the new period, "township governance" is the dominant force that reflects the state power. "village governance" is the foundation that reflects the community authority. In these organizations, the formal organization of village belongs to the state's political power system, but it is not a government organization. The village party branch is the core of the village-level power organization. The villagers' committees, as self-governed grass-roots organizations, are changing the political nature and operational paths of the village's political methods. Township government and village governance organization are co-dependent.

At the same time, the villagers' group is an important part of the village governance structure. It is also a force that cannot be ignored in rural politics. The villagers' group is not only the most common collective economic organization in China's rural society at the moment, but it is also a community organization composed of natural villages. It is the most basic living environment for villagers and an integral part of the village governance structure. By law, the villagers' group is a collective economic organization and is the owner of collective land.

The elderly authority still played an important role in the display of politics in the countryside. A notable difference between the elderly and the intellectuals of traditional society is that they are not actually detached from the formal organization of the village but are within the system and have certain authority.

The family and the associated lineage are always the basic units for observing the political structure of Chinese rural society. However, since the beginning of the transition into modern society, this situation has undergone changes. As the society continues to divide, lineage forces have been impacted in several ways. Since the founding of the New PRC the foundation of power of the rural lineage has been shaken through the cooperation and collectivization movement. The class division has replaced the affinity of blood, and the social function of family and lineage has even been cancelled. After the implementation of the household contract responsibility system for remuneration in the 1980s, the family's economic interests have been affirmed by the state's laws and given new content. In connection with economic interests, the legal status of rural families has also been restored to a certain degree. On many occasions, the family has become an actor in rural politics. The family's interest structure has become the basis of the rural social and political order. It not only contains information on many rural public powers, but also is the fundamental reason for understanding the stability and turmoil of the rural political order.

5. CONCLUSION

In this research, vernacular houses are seen as a dynamic process instead of a constant entity. The dynamic process is constituted of a series of continuous temporal segments. With this research perspective, the rural built environment is portrayed as a continuum of temporal segments of settlement.

The rural built environment is visualized as an integral part of multiple spatial layers with different scales. Different spatial levels are the result of observing the space through

different lenses with different resolution. It proposes a comprehensive research framework which integrates all the spatial levels to provide increased depth of research into the specific case.

In this research, the three building levels are discussed specifically, to illustrate the formal transformation of space and the governance power behind it. Generally, there are two governance systems that shape the vernacular houses on different levels, a formal one from the government office, and an informal one from the local community. Besides, three agents are engaged in modeling the issue, which are government, individual (family or each villager), and intermediate organizations, with each agent playing a different role at different levels of construction.

The housing governance that controls the transformation of the built environment at different levels has clear hierarchies. Two systems govern the village, which are the administrative management as a top-down system, and the self-management by villagers as a bottom-up system. These two systems control the village on different levels, and the spheres of their influences are distinct during different socio-economic periods. Besides, three forces are engaged in modeling the built environment. They are the government, the individuals (family or each villager), and the intermediate organizations. State and individuals are the two poles of the society that the former represents the official ideology to control the society, and the latter represents the daily life of real people. They play different roles at different levels of construction. An intermediate organization exists as the transitional status between them to link the local government and individual villagers, different groups play the intermediate role in different periods. For example, in Imperial China, the lineage was responsible for the communication between the public and private; and in the planned economy of the PRC, this role was played by production brigade. Moreover, the changing contexts of the tangible and intangible environment on society, economy, politics, culture, and technology caused the corresponding changes of these two controlling systems and led to a series of contradictions between them in different periods. Therefore, it can be seen as the key to understanding the transformations of the built environment in the village.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Conceptualization: Xiaoyu Lin, Beisi Jia
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Investigation: Xiaoyu Lin
Methodology: Xiaoyu Lin, Beisi Jia
Project administration: Xiaoyu Lin
Writing – original draft: Xiaoyu Lin
Writing – review & editing: Xiaoyu Lin, Beisi Jia

All authors have read and agreed to the published version of the manuscript.

REFERENCES

[1] The Open Group. The Open Group Architecture Framework (TOGAF), online open resources, 1999–2006, https://pubs.opengroup.org/architecture/togaf8-doc/arch/chap26.html

[2] Collins P. Changing ideals in modern architecture, 1750-1950. 1967, McGill Univ. Press, Montreal, 2–13.

[3] Rudofsky B. Architecture without architects: a short introduction to non-pedigreed architecture. 1964, UNM Press, Albuquerque.

[4] Rudofsky B. The prodigious buildings. 1977, Harcort Brace Jovanovic, New York Garden City.
[5] Gardi R. Indigenous African architecture. 1973, Van Nostrad Reinhold, New York.
[6] Oliver P. Shelter, sign and symbol. 1975, Barrie and Jenkins, London.
[7] Duly C. The houses for mankind.1979, Thames and Hudson Ltd, London.
[8] Blier S. The anatomy of architecture: ontology and metaphor in Batammaliba architectural expression. 1987, Cambridge University Press, Cambridge.
[9] Oliver P. Shelter and society. 1976, Barrie and Jenkins, London.
[10] Oliver P (ed). Encyclopedia of vernacular architecture of the world. 1997, Volume 1, 2 and 3, Cambridge University Press, Cambridge.
[11] Oliver P. Dwellings: the house across the world. 1987, University of Texas Press, Austin.
[12] Rapoport A. House form and culture. 1969, Prentice-Hall, Englewood Cliffs.
[13] Glassie H. Folk housing in middle Virginia: a structural analysis of historic artifacts. 1976, University of Tennessee Press, Tennessee.
[14] Upton D, Vlach J. Common places: readings in American vernacular architecture. 1986, University of Georgia Press, Georgia.
[15] Turan M. Vernacular architecture: paradigms of environmental response. 1993, Avebury, Aldershot.
[16] Bourdier J, Al Sayyad N. Dwellings, settlements, and tradition: cross-cultural perspectives.1989, University Press of America, Maryland.
[17] Asquith L, Vellinga M (eds). Vernacular architecture in the twenty-first century: theory, education and practice. 2006, Taylor & Francis, Oxfordshire.
[18] Duan, J. Chengzhen kongjian jiexi: Taihu Liuyu guzhen kongjian jiegou yu xingtai [Urban spatial analysis: spatial structure and form of ancient towns in the Taihu Lake Basin]. 2002, China Architecture and Building Press, Beijing.
[19] Kong Y, Zhang J, Yan R. Chuantong juluo kongjian xingtai gouyin de duofa huzheng—Dui Jinan Wangfuchizi pianqu de tushi fenxi [Multi-method mutual proof of the spatial form structure of traditional settlements—Illustrated analysis of Wangfuchizi area in Jinan] [J]. Architectural Journal, 2016(5): 86–91.
[20] Wang Y. Chuantong juluo jiegou zhong de kongjian gainian [Spatial concept in traditional settlement structure]. 2016, China Architecture and Building Press, Beijing.
[21] Wang Y. Zaidixingyingzao: Sunan xiangcun juluo kongjian xingtai leixing jiqi yanhua yanjiu. 2019, Southeast University Press, Nanjing.
[22] Habraken NJ. An alternative to mass housing [Translated by B. Valkenburg]. 1972, Architectural Press, London.
[23] Conzen MRG. Alnwick, Northumberland: a study in town plan analysis. 1960 (2nd revised edition, 1969), Institute of British Geographers, London.
[24] Kendall S, Teicher J, Residential open building. 2000, Spon Press, London.
[25] Jia B, Jiang Y. Flexibility of traditional buildings and craftsmanship in China [J]. Open House International, 2011, 36(4): 20–31.
[26] Lin X, Jia B. Living sustainability: transformation of the built environment in Xiaqiao Village, China [J]. Procedia - Engineering, 2016, 142(02): 48–55.
[27] Lin X, Jia B. The intangible sustainability on tangible flexibility: a case study of vernacular architecture in Shangjiaoyang Village, Taishun, China (1814-1949) [J]. Procedia -Social and Behavioral Sciences, 2015, 179: 141–153.
[28] Friedman E, Pickowicz PG, Selden M, et al. Chinese village, socialist state. 1993, Yale University Press, 225.
[29] Gregory R. Cadres and kin: making a socialist village in West China, 1921–1991. 1998, Stanford Press, Stanford, 96.

[30] Qin H. Chuantong zhonghua diguo de xiangcun jichu kongzhi [Foundational control over villages in traditional Chinese empires]. 2005, The Commercial Press, Shanghai, 2.

[31] Shue V. The reach of the state: sketches of the Chinese body politic. 1998, Stanford University Press, Stanford.

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Tiangong Louge in Eastern Pure Land Illustrations of the Medicine Buddha – A Secondary Publication

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ABSTRACT

After the arrival of Buddhism in China, the foreign concept of heavenly buildings merged with the indigenous Tang-Song architecture into what became known as *tiangong louge* (heavenly palaces). Through comparison with Song building standards (*Yingzao Fashi*), this paper analyzes the architectural representations of *tiangong louge* in Eastern Pure Land illustrations of the Medicine Buddha. What becomes immediately apparent is that *Yingzao Fashi* describes only a few specific buildings (*dianshen*, *chalou*, *jiaolou*, *xiewu*, *xinglang*), whereas the Pure Land illustrations depict a greater diversity and variety of forms (for example, *sanmen*). A possible reason for this is that the idea of the Eastern Pure Land underwent significant changes before the *Yingzao Fashi* was compiled. Another reason is that the belief in the Eastern Pure Land was always rooted in reality and the actual conditions of the site. Additionally, Eastern Pure Land illustrations reveal four different types of clustered design: open foreground, one courtyard; open foreground, two courtyards; closed foreground, one courtyard; and closed foreground, two courtyards.

Keywords: Eastern Pure Land illustrations; *tiangong louge*; *Yingzao Fashi*

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"*Tiangong louge*" is the translation of Blissful Abode in the Buddhist belief of Pure Land; it is a form of "*Tiangong*" (Heavenly Palaces) created according to the image of Chinese architecture after integration into the traditional concept of spirits and gods in China in the Buddhist expansion process in East Asia. Beginning in the Han (206 BCE – 220 CE) and Jin (265–420) dynasties, thriving in the Tang dynasty (618–907) and stagnating in the *Yingzao Fashi* of the Song dynasty (hereinafter referred to as *Yingzao Fashi* or *Fashi, which is a technical treatise on architecture and craftsmanship*), the formally named "*Tiangong louge*"is the highest level of curtains and recesses in the *Fashi*.

1. "LAPIS LAZULI" AND TIANGONG LOUGE IN EASTERN PURE LAND ILLUSTRATIONS

1.1 Medicine Buddha and *Sutta pitaka*

Medicine Buddha (Sanskrit: Bhaisajyaguru), whose full name is Bhaisajyaguru Vaiduryaprabha (Medicine Buddha of Lapis Lazuli Crystal Radiance), is the leader of the Eastern Pure Lapis Lazuli Land in Buddhism. The *Sutta pitaka*, on which the method of the Master of Healing is based, is the Sutra of the Master of Healing. During its flow into China, there had been five editions of Chinese translations of it, with four preserved but one lost. The first translation is the *Sutra Spoken by the Buddha on the Abhieka*, which eliminates faults of the past and confers freedom from birth to death (*Fo shuo guanding bachu guozui shengsi dedu jing*) by Po-Srimitra (?–342) in the Eastern Jin dynasty (317–420). The second is the *Sutra on the Master of Healing of Lapis Lazuli Radiance* (*Yaoshi liuli guang jing*) (already lost)[1] by Hui Jian in the Liu Song period of the Southern and Northern dynasties (420–581) [Figure 1]. The third is the *Sutra Spoken by the Buddha on the Primal Vows of the Master of Healing* (*Fo shuo Yaoshi rulai benyuan jing*) re-translated by Reverend Dharmagupta (?–619) from India in the Sui dynasty (581–618). The fourth is the Sutra on the Merits of the Primal Vows of the Masters of Healing of Lapis Lazuli Radiance (*Yaoshi liuli guang rulai benyuan gongde jing*) by Xuanzang (602–664) in the Tang dynasty (618–907). And the fifth, which is a little later than the fourth, is the *Sutra on the Merits of the Primal Vows of the Seven Buddhas, the Masters of Healing of Lapis Lazuli Radiance* (*Yaoshi liuli guang qifo benyuan gongde jing*) by Yi Jing (635–713) in the Tang dynasty.

Figure 1. Medicine Buddha and Suryaprabha and Candraprabha. The *Sutra Spoken by the Buddha on the Abhi·eka* which eliminates faults of the past and confers freedom from birth to death by Po-Srimitra, Dunhuang manuscript, Dharma treasury P2013.

The contents of the *Sutra of the Master of Healing* can be divided in to two parts: the first part depicts that the honored Shakyamuni preached under the Joyful Tree of Musical Breezes in the city of Vaishal and requested by Manjushri, narrated Master of Healing of the Eastern Lapis Lazuli Radiance's twelve primal vows. The second part is about merits and good results gained by believing in this sutra. The so-called "primal vows" are the vows made by bodhisattvas to rescue beings before attaining Buddhahood through

[1] Jian Hui, bhiksu of Luye Temple, Moling (today's Jiangning district, Nanjing), the dates of birth and death are unknown. It is said that Jian Hui Translation was typewritten from the translation of Po-Srimitra. There are four assertions.

practice, including "universal vows" of all bodhisattvas and "specific vows" of various bodhisattvas for their respective pure lands, such as Amitabha's forty-eight vows, Maitreya's ten good vows. Central to the twelve vows of Medicine Master Buddha is to eliminate all the suffering and afflictions of sentient beings in their present life, heal diseases, remove calamities, and extend life expectancy. The resultant Medicine Buddha faith is secular and utilitarian in nature.

Although all the translations of the *Sutra of the Master of Healing* are almost the same in terms of basic contents, difference and preference in contents are shown in the Healing Master Sutra illustration due to the trade-off with the *Sutta pitaka* made by the translators, and difference in their understanding of the *Sutta pitaka*. For example, Xuanzang's translation only describes the Master of Healing, and in the illustration based on this are usually the so-called "Three Sages of the East," with the Medicine Buddha standing in the middle and Sūryaprabha and Candraprabha at the left and right as retinues. And Dharmagupta's translation depicts the Master of Healing as seven bodies, and in the Healing Master Sutra illustration on the north wall of Cave 220 in Dunhuang, which was painted based on this, are seven Buddhas [Figure 2]. In Dunhuang, the Sutra of the Mastering of Healing is the *Sutta pitaka* that circulates widely. It is estimated that there are up to 295 copies of the Sutra of the Master of Healing in the remains of Buddhist manuscripts and 128 extant "Healing Master Illustrations." Among the five translations, Po-Srimitra and Xuanzang's translations had the highest influence early, but the "Healing Master Illustration" painted in Po-Srimitra's translation is in the trial stage with no image of *tiangong louge*, such as Dunhuang Cave 394, which was painted in the Sui dynasty (581–618) according to the Sutra Spoken by the Buddha on the Abhi·eka which eliminates faults of the past and confers freedom from birth to death (*Fo shuo guanding bachu guozui shengsi dedu jing*). *Tiangong louge* in the "Healing Master Illustration" was only created after the High Tang era (618–907), which was mainly based on Xuangzang's translation.

Figure 2. Seven Buddhas, the Masters of Healing on the north of Cave 220, Dunhuang during the early Tang dynasty, which was painted based the text of the translation by Yi Jing. Source: Dunhuang Academy, *Chinese Rock Caves: Dunhuang Mogao Caves III*.

The Sutra of the Master of Healing depicts the buildings in the Eastern Lapis Lazuli Pure Land very briefly and it does not mention buildings in its crucial twelve primal vows of Medicine Buddha, only putting a passage behind it: "The Buddha's land…The ground is made of vaidurya, with golden cords lining the roads. The city, watchtower, palace, pavilion, verandas, windows, and latticework are all made of the seven treasures. The merit, virtue, and adornments of this land are identical to those of the Western Land of Ultimate Bliss" [2]. This scripture contains two key points:

First, the main architectural types of "city, watchtower, palace, and pavilion" are largely given [3] [2].

Second, it is noted that the buildings in the world of the Eastern Pure Land are "identical" to those in the Western Pure Land. Therefore, *tiangong louge* can be painted with reference to the Western Pure Land. It appeared in the Healing Master Sutra illustration on the east wall of Mogao Cave 148 in Dunhuang for the first time [Figure 3], which directly imitates the composition of the Western Pure Land illustration and shows a grand scene when appearing, unparalleled in any of the subsequent Healing Master Sutra illustrations for a very long period of time, such as Mogao Cave 231 [Figure 4] and 112 [Figure 5] in the mid-Tang dynasty.

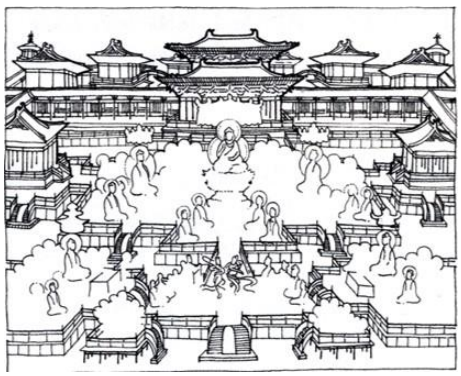

Figure 3. Healing Master Sutra illustration in the east of Cave 148 in Dunhuang during the High Tang era. Source: *Research on buildings in Dunhuang* by Xiao Mo.

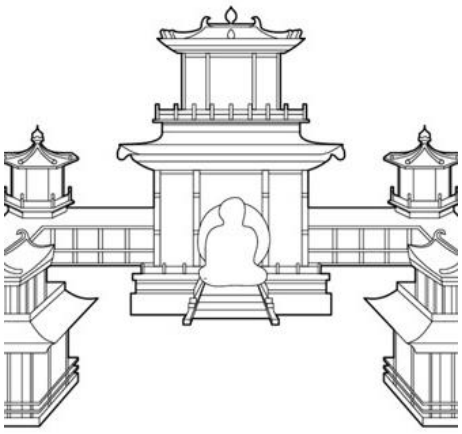

Figure 4. Healing Master Sutra illustration on the north wall of Cave 231 in Mogao Caves (the mid-Tang dynasty). Source: Drawing by the author.

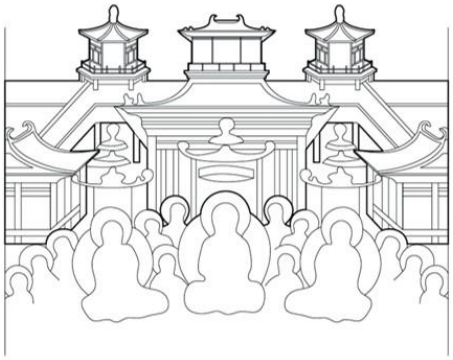

Figure 5. Healing Master Sutra illustration of Cave 12 in Mogao Caves (mid-Tang dynasty). Source: Drawing by the author.

1.2 From "Painting of Sermons" to "Pure Land Illustration"

The Pure Land Illustration of the Eastern Master of Healing broadly went through three stages: "Painting of Sermons" as a predecessor, pure land illustration that only reflects Buddha's sermons, and eastern lapis lazuli pure land illustration with vast building clusters as its background. Only in the third stage exists *tiangong louge*.

The so-called "Painting of Sermons" generally refers to the painting of figures with Buddhas (or Bodhisattvas) preaching the dharma with their thumb and index fingers touching to form a circle as the main figure and retinues arranged in the left and right, mostly without inscriptions or distinct image

[2] "Verandas, windows, and latticework" in the scripture are not individual types of buildings. "Verandas" are corridors with decorations and a part of buildings, like "windows," so they are collectively referred to. "Latticework" refers to a network-shaped structure in buildings, which was very popular in the Han dynasty, known as "Fusi" (a screen outside the gate).

representation. "Many figure names are untraceable. As it is impossible to know from the picture the name of Buddha figures painted, whether there is the specific subject of sermons, and whether the scene painted is a specific scene or contents, it is just roughly referred to as the painting of sermons" [4]. "Painting of Sermons" should definitely not be classified as pure land illustrations due to uncertainties in most of its contents, but the image of its figure "preaching the dharma" is at the heart of the composition of the picture of subsequent pure land illustration.

A group of pictures that depict contents stated in Buddha sutras are referred to as Sutra illustration pictures, or Sutra illustration. A picture painted based on the Flower *Adornment (Avatamsaka) Sutra* is referred to an illustration of the Flower Adornment (Avatamsaka) Sutra. The picture of Maitreya in the Tuṣita Heaven (Heaven of Joy) painted according to the *Tuite Sutra of the Contemplation of Maitreya Bodhisattva's Ascent to Tushita Heaven Spoken by the Buddha* is referred to as illustrations of Maitreya's ascent [3]. The picture of the Western Pure Land painted based on *Three Pure Land Sutras* (the Longer Sukhavativyuha Sutra [Infinite Life Sutra], Amitayurdhyana Sutra [Contemplation Sutra] and the Shorter Sukhavativyuha Sutra [Amitabha Sutra]) is referred to as Western Pure Land illustration. The Eastern Healing Master Pure Land illustration in question is based on the *Sutra of the Master of Healing*, and the illustration probably appeared in the Sui dynasty (581–618). There are four extant Healing Master Pure Land illustrations (Cave 394,417,433 and 436) in Dunhuang. Pure Land illustration in its infancy mainly reflects Medicine Buddha's sermon and Dharmapāla (dharma protectors). Take Dunhuang Cave 394 as an example [Figure 6], in the middle are Medicine Buddha and retinues Suryaprabha and Candraprabha, and on both sides are 12 generals as guardians holding a burning lamp in their hands, who are "Twelve Yaksha Generals" described in the *Sutra of the Master of Healing*. In addition, there are just very few objects of Eastern Healing Master Pure Land like treasure tree and no buildings. Cave 220 of the early Tang dynasty is an important work in the transitional period, and the picture on it can be divided into upper, middle, and lower segments. The upper segment is about taking flight, the cradle of "Void and adornment" discussed below, heralding appearance of *tiangong louge*. The middle segment has Masters of Healing (seven Buddhas and eight bodhisattvas) on the jeweled platform. The base with carved balustrades is one of the first buildings in the Healing Master illustration, which is flanked by 12 Yakshas and treasure trees. And the lower segment contains burning lamps, jewel ponds, and musicians and performers, with two dancers at both the east and the west with flowing scarves and ribbons. The dance they perform is called Hu whirling dance. It must have been painted based on real models.

Figure 6. Healing Master Sutra illustration on the east wall of Cave 394 in Dunhuang during the Sui dynasty. Source: *Painting art of Dunhuang Sutra illustrations of the Sui dynasty* by Zhao Shengliang.

[3] *Maitreya Sutra* is divided into two parts: the *Sutra of Maitreya's Ascent*, which depicts that Maitreya Buddha preach the dharma in"Tushita Heaven," and the *Sutra of Maitreya's Descent*, which depicts Maitreya attained Buddhahood. Therefore, what is associated with "tiangong louge"is mainly Maitreya's Ascent Sutra illustrations.

1.3 "Palace of the Heavenly Joy" in the Maitreya Pure Land illustration

There is a close relationship among the illustration of Maitreya's Birth, the Western Pure Land illustration, and the Healing Master of Sutra illustration. They are often arranged opposite one another in Dunhuang Cave. For details, see Appendix 2 in the *Research on Suo Yibian Cave of Dunhuang Mogao Caves* by Li Jinjuan: "Correspondence Table of the North and South Walls of the Main Chamber of Mogao Caves (after the Sui dynasty)" [5]. It can be seen that the Palace of the Heavenly Joy in the illustration of Maitreya's Birth, the "Void and Adornment" in the Western Pure Land illustration and the Healing Master Sutra illustration are paralleled to *tiangong louge* in Buddha niches in *Yingzao Fashi*.

In Buddhism, "heaven" is divided into 28 levels. These 28 heavens exist within three different realms: the desire realm, the form realm, and the formless realm. The fourth heaven in the desire realm is Maitreya's "Heavenly Joy." In the three realms of Buddhism, the formless realm cannot be depicted graphically and the desire and form realms are basically nominal except "Heavenly Joy." "Heavenly Joy" had been gradually understood in a Chinese way, for example, in the *Romance of the Western Chamber* (*Xixiang Ji*) by Wang Shifu in the Yuan dynasty (1271–1368), there is a dialogue: "This is Tushita Palace. Don't assume it to be the heaven of Separation's Regret." The heaven of Separation's Regret is the highest of the 33 heavens in Daoism, the altar of the Supreme Venerable Sovereign (Taishang Laojun). In Wu Cheng'en's novel the *Journey to the West* (*Xi You Ji*) of the mid-Ming dynasty, the Supreme Venerable Sovereign was simply placed in the Tushita Palace.

The depiction of "Tushita Palace" in the illustration is mainly based on three passages in the *Sutra of the Contemplation of Maitreya Bodhisattva's Ascent to Tushita Heaven Spoken by the Buddha*:

(1) Maitreya was reborn in the Palace of the Heavenly Joy, where "there are 50 billion Sons of Heaven, who build palaces with divine rapture to donate Maitreya Bodhisattva who is in the Stage of One Life to Replacement."
(2) When Maitreya was born by transformation, "he sat on the lion seat in the Mani Hall in the Seven-Jewel-Tower in the Tuṣita Heaven and was suddenly born by transformation, sitting cross-legged atop lotus flowers."
(3) There is a deity named Rḍḍhibhadra. He built the "Good Dharma Lecture Hall" (Sudharman) for Maitreya to preach the dharma.

By rounding up these scripts, it can be seen that there is a majestic palace in the Tushita Heaven, which was built by 50 billion Sons of Heaven using bhagyata (luck, power of wisdom) to donate Maitreya Buddha and has Mani Hall in it. The lion seat in the Seven-Jewel Tower in the Mani Hall is where Maitreya was born by transformation. He sat cross-legged atop lotus flowers the moment he was born. There is also the "Good Dharma Lecture Hall" (Sudharman) in the palace for Maitreya to preach the dharma. As for individual buildings like the palace, the Mani Hall and the Good Dharma Lecture Hall in the scripture, as Xiao Mo pointed out:

For a majority of the pictures that depict the image of buildings, their original aim is not to demonstrate buildings in man's world, but to demonstrate the "Kingdom of Heaven", i.e., the Western Pure Land and the Tushita Palace described in the Amitayurbhavana Sutra, the Amitabha Sutra, the Previous Life of the Maitreya Bodhisattva Sutra…But the root of the Kingdom of Heaven is not in heaven, but on Earth. The so-called Kingdom of Heaven is created by people according to the mode of the real world. As a particular mural image, they are even likely very accurate reflection of real-world things [7].

Bai Huawen also argued that they were "mostly dramatized and idealized based on large Buddhist temple buildings between the Southern and Northern dynasties [420–581] and the Sui and Tang dynasties [581–907]" [8]. This means that buildings in illustrations like

the Tushita Palace are based on the blueprints of large Buddhist temples in China back then (when illustrations were painted), and not the realistic portrayal of certain Buddhist temples.

This passage can be supplemented by three points. First, the Sui and Tang dynasties in the lower limit of the timeline should at least be extended down to the Song dynasty (960–1279) and the Xixia dynasty (1038–1227), for example, the buildings in the illustration in the Dunhuang Mogao Caves and the Yulin Caves of the Xixia dynasty, as well as the Dazu Rock Carvings. Second, the buildings in illustrations between the Southern and Northern dynasties and the Song dynasty are not stationary, which keenly reflects the subtle changes in the buildings of that time. Third, the *Sutra of the Contemplation of Maitreya Bodhisattva's Ascent to Tushita Heaven Spoken by the Buddha* depicts the magnificence of the "wall" of the Tushita Heaven on several occasions, and it was a popular activity to donate houses as temples in the Southern and Northern dynasties, the Tushita Palace in the illustration appears as a courtyard-style building.

1.4 The So-called "Void and Adornment" and "*Tiangong Louge*"

The picture of Pure Land illustration is usually divided into the upper, middle, and lower layers. For those on the upper layer, they are named "Void and Adornment" by today's researchers, and demonstrated mainly based on the scripture of Three Pure Land Sutras, such as Thirty-Second Vow (Majestic Adornments Surpassing Those of All Heavenly Beings) in the *Sukhavativyuha Sutra*:

> When I attain Buddhahood, everything in my land, from the ground to the void, such as palaces, pavilions, ponds, streams, flowers, and trees, are made by integrating countless precious substances, and a hundred thousand kinds of fragrance marvelously adorned, surpassing anything in the realms of devas.

It can be seen from the scripture that:

(1) There are three tiers of underground, ground, and "void" in the Western Pure Land, and the "void" is the highest tier.
(2) The "void" coincides with the "Heaven" in traditional Chinese culture. Palaces and pavilions are wondrously decorated, surpassing anything in the realms of devas.

It is also necessary to understand the Buddhist term "Magnificence." According to verification by Bai Huawen:

> When Buddhist scriptures were translated in the Southern and Northern dynasties, the word "Magnificence" was used to paraphrase Sanskrit vyūha, alamkrta or bhūsita. As a noun, it meant the demonstrated decorations with Buddhist characteristics were splendid, as the *Amitabha Sutra* describes: "The realization of the land of Ultimate Bliss is thus meritoriously magnificent," or it referred to the brilliance, vastness, and splendidness exhibited by Buddhas and Bodhisattvas, and so on, as a whole from inside to outside, and even to the environment [8].

In the "void" of the Pure Land illustration, palaces and pavilions take up a large part of it, which some scholars called "Building adornments" [5]. With the existence of "Void adornment, it is easy to associate the Pure Land with the Heaven" in Chinese notion. Through combination with the concepts of supernatural beings in traditional Chinese culture, "Rebirth" in Buddhism is construed as "Attain immortality" and palaces and pavilions in the Pure Land illustration is translated as "*Tiangong louge*."

2. INDIVIDUAL ELEMENTS OF "*TIANGONG LOUGE*" IN THE EASTERN PURE LAND ILLUSTRATION

Although the *Sutra of the Mater of Healing* downplays buildings, its aims of eradicating sufferings of beings in the present, healing diseases, removing disasters, and extending lifespans, have a profound influence on

tiangong louge in illustrations. In the "theory" of the *Commentary on the Sutra of the Master of Healing*, Master Taixu argued:

> The method of Master of Healing and Amitabha Buddha is to entrust the task of rescuing sentient beings to Eastern Healing Master, and entrust the task of traversing death to Western Amitabha. East ranks number 1 of the four cardinal directions and represents spring in the four quarters, which denotes the growth of everything, and the task of nurturing life and extending life is assigned to it. West ranks number 3 in the four cardinal directions and represents autumn in the four quarters, in which everything looks declining, so the task of saving from death and traversing death is assigned to it [10].

The essence of rescuing the living beings by Eastern Healing Master is to keep its illustration closer to the present life, including the selection of individual buildings in the *tiangong louge* in it.

In addition, it is worth noting that, in the timeline, Eastern Pure Land illustration is a process of gradual evolution starting from the Sui dynasty (581–618), while *tiangong louge* in *Fashi* is the "well-established" product in the Northern Song dynasty (960–1127). Murals and rock carvings as the carriers of Pure Land illustration are more abundant than joinery work (Xiaomuzuo) in the *Fashi* in spatial expression modes. To more comprehensively reveal its correlation with *Fashi* and its own peculiarities, in this paper, we analyze individual elements of "*tiangong louge*"in the Eastern Pure Land illustration by following two clues, with *Fashi* as a reference system.

2.1 Clue 1: Types of existing individual buildings in the *tiangong louge* in *Fashi*

Six kinds of individual elements that constitute "*tiangong louge*"are given in the *Fashi*: hall bodies, teahouses, corner towers, tortoise-head porches, and corridors. Except the tortoise-head porches, all other elements are in the Eastern Pure Land illustration, but with slight differences in usage. Furthermore, there are rainbow bridges that are not mentioned but exist in drawings.

(1) Hall body (or hall): The hall body is the highest level of individual building type in *tiangong louge* in the *Fashi*. *Fashi* stipulates that the hall body should be a 3-story building [4]. As it is a multi-story building, *Fashi* calls it "hall body" to distinguish it from a single-story "hall." Moreover, *Fashi* also provides that the hall body should be on the central axis with a nine-ridge roof of double eaves, flanked by wing rooms and sometimes additionally equipped with tortoise-head porches. Most of the hall bodies in the Western Pure Land illustration meet these conditions, but those in the Eastern Pure Land illustration rarely meet the conditions, except those buildings as the main part of the central axis. Generally, they do not have roofs of double eaves and do not have tortoise-head porches, and even have only one story [Figure 3]. Wing rooms are rare in the front tier [Figures 3 and 4], but occasional in the rear tier, such as Cave 85 in Dunhuang Mogao Caves [Figure 7]. Seemingly, the "hall body" in the Healing Master Pure Land illustration is at a lower level, actually it is because buildings in the Healing Master Pure Land illustration are secularized. It is important to note that in the picture of illustrations, including Healing Master Pure Land illustration, the column grids on the upper and lower floors of the tower are not aligned with each other. They are constructed in accordance with the logic of "storied house," with the column grid of the upper floor standing on the balcony, an equivalent of the platform of the upper floor.

[4] The balcony in Fashi amounts to a one-story building, actually it is a two-story building.

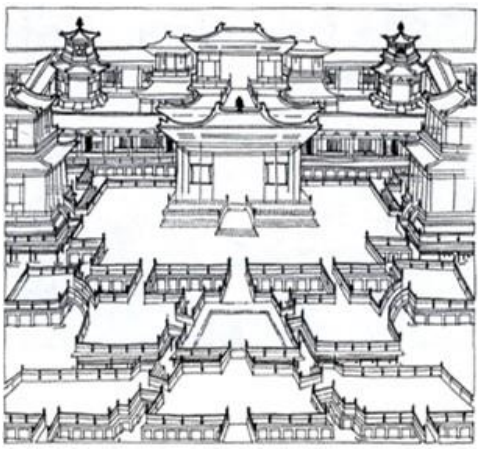

Figure 7. Cave 85 of Mogao Caves, Dunhuang (the late Tang dynasty). Source: *Research on buildings in Dunhuang* by Xiao Mo.

(2) Teahouse: In *tiangong louge* in the *Fashi*, teahouses are the second highest-level buildings after the"hall bodies," which can serve as the main part of the building cluster, for example, the"teahouse" in the rotating library in the *Fashi*. Its nine-ridge roof with a single eave should be 3-storied, and it is permissible to be accompanied by wing rooms. The designation "teahouse" ought to be earned by changing the name of "tearoom." "Tearoom" is used to handle external liaisons and normally a single-storey building in Chinese Buddhism. "Teahouses" totally loss their function of reception in *tiangong louge* in the *Fashi* and are placed opposite to one another on the flanks of the hall body. Their forms basically remained unchanged from the High Tang era [Figure 3], the mid-Tang dynasty [Figure 4], the late Tang dynasty [Figure 7], the Five dynasties [Figure 8], the Song dynasty [Figure 9] and the Xixia dynasty [Figure 10].

(3) Corner tower: In *tiangong louge* in the *Fashi*, "corner tower" consists of a base tower (name of the ground floor), balconies, floor structures, and a nine-ridge roof with a single eave. Unlike those in the *Fashi*, corner towers in the Eastern Pure Land illustration are almost all pavilion-shaped, with a round [Figures 4 and 8], octagonal, or pyramidal hexagonal pointed roof [Figures 4,5,7]. This phenomenon is not occasional. The significance of pavilions in the Eastern Pure Land illustration is elaborated in the following paragraphs.

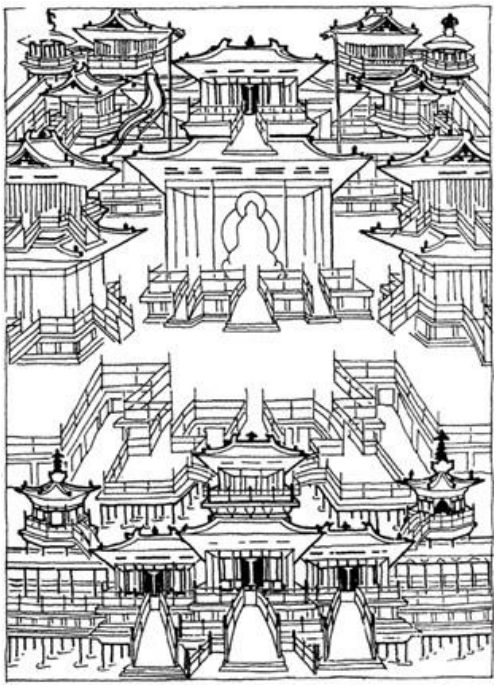

Figure 8. Cave 146 of Mogao Caves, Dunhuang (the Five Dynasties). Source: *Research on buildings in Dunhuang* by Xiao Mo.

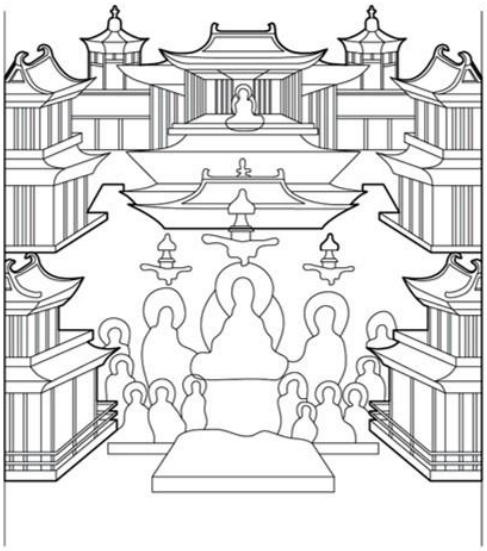

Figure 9. Healing Master Sutra illustration on the north wall of Cave 55 in Mogao Caves (the Song dynasty). Source: Drawing by the author.

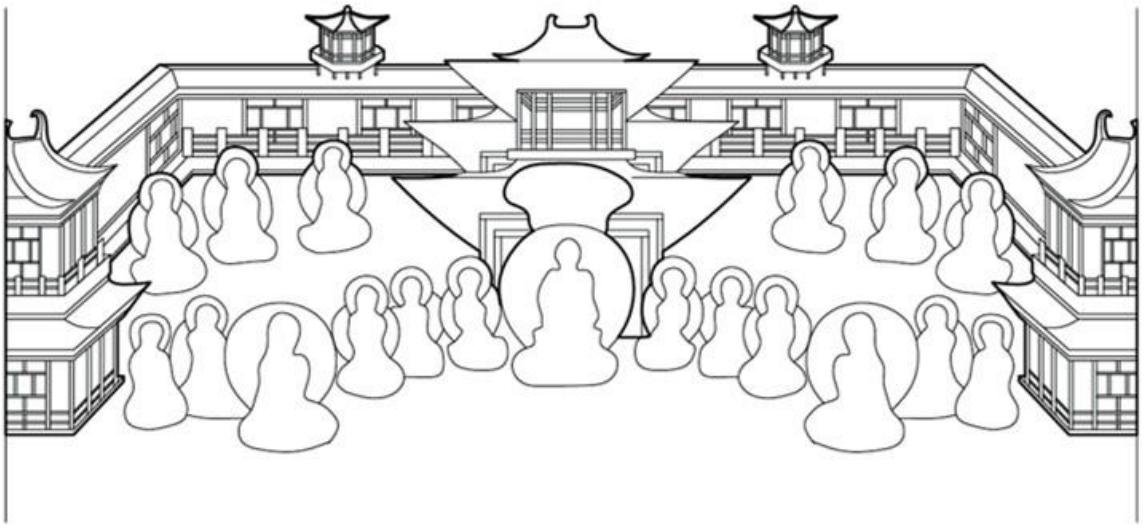

Figure 10. Healing Master Sutra illustration of Cave 400 in Mogao Caves (the XiXia dynasty). Source: Drawing by the author.

(4) Corridor: In *tiangong louge* in the *Fashi*, corridors serve as a link between hall bodies, teahouses, and corner towers. As we know, buildings in the Qin (221–206 BCE) and Han (206 BCE – 220 CE) dynasties were not free of high platforms, and palace halls were mostly two-stories with bottom-overhead design [5], so that buildings were jointed through a bottom-overhead colonnade [11]. The Tang dynasty was a transitional period when corridor gradually replaced colonnades. Generally speaking, in the Western Pure Land illustration from the early Tang dynasty to the High Tang era, it is possible to see loft railing architecture and colonnades used in connection, such as the Amitayurbhavana Sutra illustration in Cave 217 of the early Tang dynasty and Cave 172 of the High Tang era in Dunhuang Mogao Caves. *Tiangong louge* in the Eastern Pure Land mostly dates back to as late as the mid-Tang dynasty and onwards, and it is possible to see that corridors had basically replaced colonnades, for example, Cave 85 of the late Tang dynasty in Dunhuang Mogao Caves. Despite maintaining the relic of colonnades, the height of the bottom-overhead portion is greatly reduced [Figure 7]. There are also illustrations where colonnades were enclosed, such as Healing Master Sutra illustration in Cave 360 in the Mogao Caves. This is roughly identical to the corridors in the drawings of the *Fashi*.

(5) Wing rooms: A wing room, also known as a wing hall, is a single-story, half-sized and small building originally attached to the hall. But in *tianggong louge* in the *Fashi*, it is attached to the main hall body, in addition to being attached to teahouses and corner towers, and having multiple stories. In the Eastern Pure land illustration, there are only wing rooms at the Shanmen (hill gate) [Figure 8] or the rear side [Figure 7]. Shanmen (hill gate) used to be known as "Sanmen"in the past.

(6) Rainbow bridge: An arch bridge used for connection, earned its name for looking like a rainbow. In the Healing Master Sutra illustration, rainbow bridges are used in connection between landscape buildings. For example, in the Healing Master Sutra illustration on the north wall of Cave 361 in Dunhuang Mogao

[5] Such as E'pang palace, "can accommodate ten thousand people on the upper floor and can build a five-zhang (a unit of height, 2.3 m) flag on the lower floor." See the Annals of Qin Shihuang of the Records of the Grand Historian by Sima Qian.

Caves, rainbow bridges are used in connection among pavilions, terraces, towers, and pagodas on the front and rear corridors. The system of *tiangong louge* in the *Fashi* has not dealt with rainbow bridges, only in the drawings of Buddhist shrines in *tiangong louge*, hall bodies, teahouses, and corner towers are connected through the rainbow bridges [Figure 11].

2.2 Clue 2: Type of Individual Buildings Nonexistant in *Tiangong Louge* in the *Fashi*

These types of buildings mainly include pavilions, pagodas, Sanmen (three gates), bell and scripture towers, and balconies. In addition, there are round bridge-type stairways in constructions. Numerous pavilions, pavilion-shaped corner towers, bell towers, scripture towers, and pagodas are found in the Eastern Healing Master Sutra illustration [Figure 12].

(1) Pavilion: When "pavilion" is explained in Volume 1 of the *Fashi*, a passage of the Comprehensive Meaning of Customs and Mores was invoked, which reads: "According to the Discourses of the States of the Spring and Autumn period, there is a'border post'(寓望， *yuwang*), now known as 'pavilion'" [13] . The so-called "border post" was a building set up on the border for lookout and accommodation in the Qin dynasty (221–206 BCE). *The Comprehensive Meaning of Customs and Mores* was compiled by Ying Shao in the Eastern Han dynasty (c.153–196), which means that "pavilion" had no sightseeing and recreation functions at that time. This situation did not change fundamentally until the Tang (618–907) and Song (960–1279) dynasties.

Pavilions emerged in the Eastern Healing Master Sutra illustration at a large scale, which firstly is a reflection of secularity of the Healing Master's faith in the use of pavilions for sightseeing and recreation in the physical world, such as the Healing Master Sutra illustration on the north wall of Cave 361 in Dunhuang Mogao Caves, where pavilions, terraces, towers, and pagodas are connected in a serial way through a rainbow bridge to form a tour route for sightseeing and enjoyment [Figure 12], which ought to originate in real life. In addition, it is necessary to consider the relationship between "pavilions" and ancient Chinese medicine. The Huazu Temple in Bozhou, Anhui Province, was set up to commemorate the great physician Hua Tuo (c.145–208). Built in the first year of the Tianyou period (904) of the Tang dynasty, the temple features a"Self-Amusing Pavilion," a place where Hua Tuo could rest. Of course, this is less-than-believable, but it revealed the thought of the builder that there should be a pavilion in the temple of the medical sage Hua Tuo. There are two reasons that pavilions are associated with traditional Chinese medicine (TCM). One is that medical plants are easy to grow in a landscaped garden, another is that washing medical herbs and making medicine require water. Therefore, from the Wei (220–265) and Jin (265–420) dynasties to the Song (960–1279) and Yuan (1271–1368) dynasties, a"pavilion" was usually built on top of the well, from which water was fetched.

(2) Pagoda: The Eastern Healing Master Pure Land illustration has much more pagodas than other Sutra illustrations, and even occasionally replaces the main hall with a pagoda [Figure 12]. When "void and adornment" was demonstrated, the pagoda floating in the cloud was also drawn on the upper part of the Sutra illustration. After pagodas entered China, building pagodas to pray for good luck and avert disasters became a folk custom. It is said that the Healing Master's faith has secular utility in eliminating sufferings of sentient beings, healing diseases, removing calamities, and extending life. Pagoda buildings in the Healing Master Pure Land illustration are exactly a reflection of such activity to

pray for good luck and avoid disasters in real society. Although the Healing Master's pagodas of this period no longer exist in China today, there are accounts of praying for good luck and avoiding disasters in reliance of pagodas in Dunhuang manuscripts. The East Pagoda of Japan's Yakushiji (Healing Master) Temple was built in 718 CE, a year of the Nara period with Japan fully emulated China. It was constructed because Emperor Tenmu vowed to build a pagoda for the recovery of his sick wife, evidence that there must be similar Healing Master's pagodas early in China.

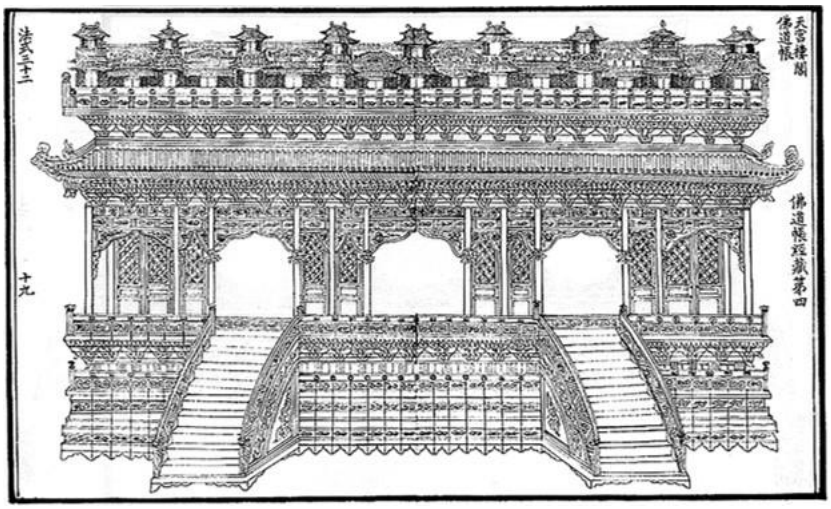

Figure 11. Plate of *yingzao fashi* "Buddhist shrine of *tiangong louge*"Source: *Yingzao Fashi* by Li Jie.

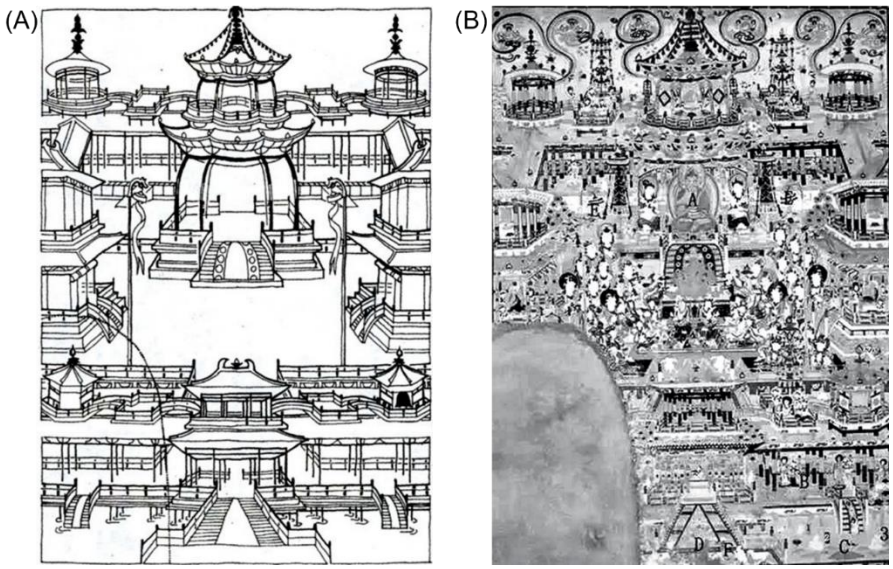

Figure 12. Healing Master Sutra illustration of Cave 361 in Dunhuang Mogao Caves. Source: *Research on building in Dunhuang* by Xiao Mo. (A) Line drawing and detailed reproduced picture [6]. (B) Present state of the original picture.

[6] When drawing this picture, Xiao Mo: (1) restored the damaged parts at the bottom left corner according to symmetricity; (2) changed the upper and lower floors of Sanmen to the same point of view (The upper layer of the original picture clearly depict the decentralized structure of columns due to variable points of view); (3) predicted hooked railings hidden on the back of the pagoda; (4) deleted lamp wheels on the front and rear four independent balconies. It is important to note that burning lamp to pray for good luck and remove calamities is the most important feature of Healing Master Sutra illustrations.

(3) Sanmen: It is the gate at the main entrance of a temple, nowadays called "Shanmen" (hill gate), in the Tang dynasty, it was called "Sanmen"(three gates), also called "Zhongmen"(middle gate) . For the origin of the name Sanmen, Xiao Mo (萧 默) made an assumption that "One possible explanation is that, generally, the temples of that time really have three gates" based on mutual verification between Dunhuang murals and literatures. But the Samen of the Buddhist temples only have one gate. Xiao Mo also proposed that, according to *Buddhabhumi Sutra*, there are three gates of liberation, which are emptiness, formlessness, and aimlessness. "Therefore, based on this kind of religious understanding, whether there really are three gates or one gate, the main gate of the temple can be called 'Sanmen' " [11].

As for "Sanmen"in Dunhuang murals, Xiao Mo had carried out full textual research and only two supplements are made here: first, the Eastern Healing Master Pure Land illustration mentioned that there are three gates at the entrance, but this is mostly inaccurate. Actually, there is only one gate equipped with two wing rooms, as in the Healing Master Pure Land illustration [Figure 8] on the north wall of Cave 146 in Dunhuang Mogao Caves, where there are wing rooms on both sides. It is important to note that the wing rooms in the present physical remains are all one-storied, only because one-storied halls had replaced three-storied hall bodies since the Song dynasty (960–1279). But the *Tiangong louge* system in the *Fashi* retains the practice of the Sui (581–618) and Tang (618–907) dynasties, in which wing rooms can be a multi-story building. Second, "Sanmen"was mostly three-storey in the early stage and the Healing Master illustrations in Dunhuang show that it is a decentralized structure, such as the Healing Master illustration on the north wall of Cave 361 in Mogao Caves, referring to the annotation of this picture. "Sanmen" in Japanese Buddhist architecture is still called "Zhongmen" today, which are mostly decentralized structures, for example, the Zhongmen of Shitennoji Temple, Kawara-dera Temple, Yakushiji Temple, Yakushiji Temple and Todaiji Temple; the counter examples are only those of Asuka-dera Temple and Horyuji Temple. Since the Song (960–1279) and Yuan (1271–1368) dynasties, Shanmen has been changed to single-story, but this decentralized structure has still been retained.

(4) Bell and scripture towers: In the Pure Land illustration that shows bell and scripture towers are usually placed symmetrically on both sides of the Sanmen. Unlike subsequent Buddhist temples, where the bell tower and the drum tower are arranged opposite to each other, those of the early stage were built with the bell tower located opposite to the scripture tower. Although physical objects of the early stage no longer exist, but in the Buddhist temples that were introduced to Japan from China in the Asuka and Nara periods, this configuration was still retained. As previously stated, in the Eastern Healing Master Pure Land illustrations, bell and scripture towers were usually made into a pavilion shape, for example, the Healing Master Sutra illustrations in Cave 146 [Figure 8] and 361 [Figure 8] in the Mogao Caves.

(5) Balcony: refers to balcony used independently as platform, not the portion that used for connection between the upper and lower floors. Liang Sicheng analyzed this kind of balcony as platform or above-water platform in his *Annotated Yingzao Fashi*. There are three kinds of balconies independently used as platforms: above water [Figure 7], sitting flat on the glazed ground [Figure 7] and sitting flat on the corridor [Figure 12]. In the Eastern Healing Master Pure Land illustrations, dance

and music and burning lamps are usually arranged on such balconies, which obviously is a reflection of the real life of that time.

(6) Stairway-based round bridge: Stairways are mostly arc-shaped in the buildings in Eastern Healing Master Pure Land illustrations. Take the Healing Master Sutra illusion on the north wall of Cave 361 in Dunhuang Mogao Caves [Figure 12] as an example, towers as hall bodies, left and right symmetrically placed teahouses, corridors, and stairways that are all arc-shaped. The stairways of the Buddhist shrines in the *Fashi* are also arc-shaped [Figure 11], known as "Stairway-based round bridge," but not seen in *Tiangong louge*.

3. GROUP OF "*TIANGONG LOUGE*"IN THE EASTERN PURE LAND ILLUSTRATION

Tiangong louge in the Eastern Pure Land illustration can be divided into open foreground and closed foreground types. The discussion along the line of these two types is carried out in the following paragraphs.

3.1 Open foreground type

Open-foreground type of pattern is an imitation of the Western Pure Land illustration. According to the *Three Pure Land Sutras* based on the Western Pure Land illustrations, the Western Pure land is flat and vast without dirt mountains, rock mountains, or hills. The so-called view of the "meditation on the water of eight meritorious virtues" suggests that there are eight lotus ponds. "The water of eight meritorious virtues" is commonly expressed by setting three layers of above-water platforms, with the foreground open and towers arranged on both voids to form an enclosed shape in the Western Pure Land illustrations. Tower boats are generally placed between the second and third floors on both flanks as a foreground of the tower in the composition of a certain number of Western Pure Land illustrations in Sichuan, such as Pantuo Temple, Qionglai [Figure 13] and Cave 4 of Shisun Mountain. There is also the notion of "Meditation on ice" that there is clean water in the Western Pure Land that forms crystal-clear ice, and ice turns into a glazed ground. This appears in the Western Pure Land illustrations as follows: the foreground has a certain number of balconies, which are on water, or on the platform adorned with seven treasures to form open foreground-type of compositions. As the Healing Master Sutra suggests that the Eastern Pure Land and the Western Pure Land are "identical;" emulating the Western Pure Land becomes one of the main types, such as the aforementioned Healing Master Sutra illustration on the north of Cave 148 [Figure 3], the Healing Master Sutra illustration of Cave 112, the Healing Master Sutra illustration of Cave 85 [Figure 7], and the Healing Master Sutra illustration of Cave 400 [Figure 10]. Open foreground-type *tianhong louge* can be further classified.

Figure 13. Western Pure Land illustration of Pantuo Temple, Qionglai, Sichuan (Detail). Source: Photo by the author.

(A) One-rise courtyard type

What is basically manifested in this type is that the hall body is equipped with two teahouses, which are connected or combined to form a U-shaped courtyard. On this basis, certain sub-types are formed by adding elements, modifying the morphology of elements but not changing this characteristic of one-rise courtyard.

This type has a clear trail of occurrence and deduction. One hall body equipped with two teahouses is the most fundamental form. This "One Hall with two Towers (including gate towers)" configuration is adopted in Maitreya Sutra and the Western Pure Land illustrations not later than the Sui dynasty (581–618). Thereafter, one hall body with two teahouses are combined to form a U-shaped courtyard, with a corner tower set up at the turn. Corner towers are usually in the form of pavilions in the Eastern Pure Land illustrations. Typical cases include the Healing Master Sutra illustration on the north wall of Cave 231 in Mogao Caves [Figure 4].

Let us see several sub-types of this type.

In the Healing Master Sutra illustration of Cave 400 [Figure 10] in Dunhuang Mogao Caves, the main part is configured with one hall body and two teahouses, with corridors behind the hall. Pavilion-shaped corner towers are moved inward along the corridor, or used in bell and scripture towers. This cave is chiseled in the Xixia dynasty (1038–1227) and at that time, corner towers in the temple were phased out and the use of pavilions, terraces, towers, and pagodas in admiration became more ubiquitous. The Sutra illustration sensitively reflects this change.

In the mid-Tang dynasty, the Healing Master Sutra illustrations of Cave 112 and Cave 231 in Mogao Caves were basically the same, but the pictures show the rear corridor stretches to the left and the right, which indicates there are courtyards on both sides. Viewed from the clear and complete image in the Sutra illustration, both are basically the same and still comply with the definition of one-rise courtyard. For simplicity, it is possible to regard it as the sub-type of this type.

Since the Song dynasty (960–1279), buildings clusters have seen an increase in the length of axis lines and the number of halls along the axis, which are also reflected in the Pure Land illustrations, resulting in a sub-type of "multiple halls (bodies) and four teahouses combined into a one-rise courtyard." Taking the Healing Master Sutra illustration [Figure 9] of Cave 55 in Dunhuang Mogao Caves as an example, three great halls rest side by side on the axis, on both flanks of the rear one are wing rooms that join corridors. There are pavilion-shaped bell and scripture towers in the corridor and two teahouses on each of the two spaces of the courtyard.

(B) Two-rise courtyard type

What's distinctive in this type is that a closed courtyard is added on the back of the one-rise courtyard to become a two-rise courtyard, which is illustrated with the following two examples.

Take a look at *tiangong louge* [Figure 3] of the Healing Master Sutra illustration on the east wall of Cave 148, Dunhuang, which consists of front and rear courtyards. There is a large hall on the forward central axis with teahouses on its two flanks and a corridor on its back to form a U-shaped courtyard, the foresaid type of one-rise courtyard. In the two-rise courtyard behind it, a hall body rests on the central axis, with two teahouses on each of the two flanks. There is a round pavilion-shaped corner tower at the turn of the enclosed corridor.

Then take a look at *tiangong louge* in the Healing Master Sutra illustration [Figure 7] of Cave 85 in Dunhuang Mogao Caves, which is comprised of front and rear two-rise courtyards.

3.2 Closed foreground type

Its foreground is made into a closed shape through encompassment with Sanmen and a corridor [Figure 8]. This pattern possibly is a product of adornment and idealization based on Buddhist temples. Closed foreground-type *tiangong louge* can also be further classified.

(A) One-courtyard type

What is basically manifested in this type is that one hall body including foreground Sanmen and the main part is accompanied by two teahouses that are connected through a corridor to form a closed courtyard. On this basis, it is possible to form certain sub-types by adding certain elements or changing the morphology of elements, but not changing the characteristics of the one-rise closed courtyard.

Take the Healing Master Sutra illustration [Figure 12] on the north wall of Cave 361 in Dunhuang Mogao Caves as an example, the hall body of its main part has changed to the tower, and bell towers, scripture towers, corner towers, balconies and rainbow bridges are added on the corridor, but the characteristics of the one-rise courtyard has not changed, so it belongs to this type.

(B) Two-rise courtyard type

What's distinctive in this type is that one closed courtyard is added to the back of the front closed one-rise courtyard to form a type of two-rise courtyard. It is also possible to add certain elements on this basis or change the morphology of elements, but not to change the characteristics of two-rise courtyard, such as Cave 146 in Dunhuang Mogao Caves [Figure 8].

4. CASE ANALYSIS FOR "TIANGONG LOUGE" IN THE EASTERN PURE LAND ILLUSTRATIONS

Individual elements of composition of and basic grouping mode of *tiangong louge* in the Eastern Pure Land illustrations have been analyzed in the above paragraphs. The general method for generating and grouping of these elements has its particular cultural background, and the logic of its own revolution does not even rule out some occasional elements. Therefore, several cases of "tiangong louge" in the Eastern Pure Land illustrations will be chosen and reconstructed for image analysis in their cultural background.

4.1 Healing Master Sutra Illustration on the North Wall of Cave 148 in Dunhuang Mogao Caves (Figure 14 in the High Tang era)

This sutra illustration is the first case of "*tiangong louge*"that appears in the Eastern Healing Master Pure Land illustration and also the only one in the High Tang era.

Figure 14. Healing Master Sutra illustration on the east wall of Cave 148 in Mogao Caves, Dunhuang. Source: *Chinese Rock Cave: Dunhuang Mogao Caves IV* by Dunhuang Academy.

This cave was chiseled in the 11th year of the Dali period of the High Tang era (776) and re-painted and restored in the mid-and late-Tang dynasty and the Xixia dynasty. It is a rare Nirvana cave with an arched roof. The Healing Master Sutra illustration is located on the north side of the east wall, opposite to the Amitayurbhavana Sutra illustration [7] on the south of the east wall.

The Healing Master Sutra illustration and *tiangong louge* in it emerged late, with the only illustration in the early Tang dynasty and one illustration in the High Tang era. There is no *tiangong louge* [Figure 2] in the

[7] There are three Sutras for Pure Land, so there are three corresponding kinds of Pure Land illustrations painted according to them: Amitayurbhavana Sutra, Amitabha Sutra and Sutra of Immeasurable Life illustrations.

Healing Master Sutra illustration of Cave 220 of the early Tang dynasty. This illustration is the first case of "*tiangong louge*"in the Eastern Healing Master Pure Land illustration. In the meantime, it is also the largest and most complicated illustration in all the Eastern Healing Master Pure Land illustrations, in which *tiangong louge* shows a grand momentum on its presence, with vast and complicated compositions far beyond subsequent pure land illustrations of the mid- and late-Tang dynasty, because it is the first time that the Eastern Healing Master Sutra illustration demonstrates "*tiangong louge*,"and there was no past experience to draw upon, and it is symmetrically placed together with the Amitayurbhavana Sutra illustration. According to the Sutra of the Master of Healing "The ground is paved with glaze, with golden cords lining the roads. The city, watchtower, palace, pavilion, verandas, windows, and latticework are all made of the seven treasures. The merit, virtue, and adornments of this land are identical to those of the Western Land of Ultimate Bliss" [12], this picture actually emulates the Western Pure Land illustration. It is nearly the same as the Amitayurbhavana Sutra illustration, except that the main figure has changed to the Healing Masters, Suryaprabha and Candraprabha.

The group of its *tiangong louge* has been analyzed in the previous paragraphs and belongs to "opened foreground-type two-rise courtyard mode." It is divided into front and rear two-rise courtyards. The front courtyard is open and the foreground has certain platforms adorned with seven treasures on the lotus pond, ascending floor by floor. This emulates the notion of "meditation on the water of eight meritorious virtues" in the Amitayurdhyana Sutra illustration. In the middle is a two-storey hall with a hip roof, which is connected to a one-storey side hall with a nine-ridge roof on the platform on both sides through a long corridor to form a large courtyard in the form of "grouping of the hall body and teahouses." In the center is also a hall with a hip roof, but with wing rooms on both flanks. There are rainbow bridges on the left and right wing rooms, which lead to the teahouses with a nine-ridge roof, and there are two other teahouses in front of the two teahouses that form an enclosed courtyard.

It is important to note that the picture depicts *tiangong louge* in imagination, "void and adornment" that rest on the top floor, one Buddha and two retinues sitting on the cloud and apsaras, music instruments floating in the sky, which represent the so-called "Self-buzzing without playing drums," and towers and pagodas floating on the cloud, which of course do not completely exist in reality. Xiao Mo removed it when redrawing the line drawings [Figure 3], possibly because he thought it was not authentic, but drawers selected these two performances from many building types just because they are correlated with the Healing Master's faith in the real world.

4.2 Healing Master Sutra Illustration on the North Wall of Cave 360 in Dunhuang Mogao Caves (Figure 15 in the Mid-Tang Dynasty)

Dunhuang was occupied by the Tibetans in the mid-Tang dynasty, who also adhered to Buddhism and chiseled a lot of rock caves and introduced new elements, including Esoteric Buddhism. There were 24 Healing Master Sutra illustrations in their infancy. Cave 360 and 361 in Mogao Caves were chosen as examples for this analysis. These caves were chosen because they are exploring works of the startup period of *tiangong louge* in the Healing Master Sutra illustrations, based directly on the Sutra of the Master of Healing, unlike Cave 148 in Mogao Caves, which straightforwardly emulates the Amitayurbhavana Sutra illustration.

The form of this cave belongs to the most popular cave of niches carved into four faces, with a truncated pyramidal roof. There are three illustrations on the south wall: Shakyamuni Mandala, Amitayurbhavana Sutra illustration, and Maitreya Sutra illustration. There are also three illustrations on the north wall: Manjusri of a Thousand Bowls, Healing Master sutra illustration and Questioning Devas Sutra illustration. It can be

seen that the Healing Master Sutra and Amitayurbhavana Sutra illustrations are placed symmetrically.

Figure 15. Healing Master Sutra illustration of Cave 360 in Dunhuang Mogao Caves. Source: *Chinese Rock Cave: Dunhuang Mogao Caves V* by Dunhuang Academy.

The foreground of sutra illustration still belongs to the opened type, but abandons ponds and emulation of the notion of "meditation on the water of eight meritorious virtues" in Amitayurbhavana Sutra illustration. In front of the main figure Healing Master, is seemingly burning lamps. Burning a lamp to pray for good luck and avoid disasters was a customer of that time. There are some "Burning lamp texts" in vow texts in Dunhuang documents, which were prepared when burning lamps to pray for good luck and avoid disasters at that time [8]. The hall body of the foreground on the main axis is three bays wide and stands on the platform with wooden hooked railings. There is a round bridge-type stairway on the left and right side of the platform. It is particularly important to note that, as for setting a finial on the top of the hall, the finial with the sign wheel holding the jewel is attached with a chain, to which a colorful ring is hung, and the other end attached to the corner of the house. This non-pagoda and non-hall building is either an already lost "pagoda" of the transitional period, or a building in people's imagination of that time. There is a pair of bell towers and scripture towers at the back of the courtyard, and a finial on top of the house.

The way of grouping this Sutra illustration is the "opened foreground type of two-rise courtyard mode." The front courtyard has one hall and two teahouses to form a U-shaped enclosed courtyard through a corridor. There are two doors on the corridor, which lead to the rear courtyard. The hall in the rear courtyard has a nine-ridge roof, with bell towers and scripture towers opposite to each other on the left and right. The ground floor is octagonal in shape, and the transitional floor is a round shape. The corridor in the rear courtyard is stretched to the left and the right, which indicates there are courtyards on both sides.

4.3 Healing Master Sutra Illustration of Cave 361 in Dunhuang Mogao Caves (Figure 12, in the Mid-Tang Dynasty)

The form of Cave 361 in Mogao Caves also has niches carved into the four faces, with a truncated pyramidal roof. There are two Sutra illustrations on the south wall: Amitabha Sutra and Diamond Sutra illustrations. There are also two Sutra illustrations on the north wall: Healing Master Sutra and Maitreya Sutra illustrations. The Healing Master Sutra and Amitabha Sutra illustrations are placed symmetrically. The form of the Healing Master Sutra illustration in this cave was also an exploration work of the startup period. The buildings in the Sutra illustration nearly occupy the entire picture [Figure 12]. From the perspective of grouping, it belongs to "one-rise courtyard type with closed foreground." The foreground still retains the notion of "meditation on the water of eight meritorious virtues" in the Western Pure Land illustrations, but it abandons open platforms, and is enclosed by Sanmen and a corridor hanging on the pond to form a courtyard.

[8] For example, the burning lamp text reads: "As regards to the treasure pagoda, burn the lamp for worship. The donor perceives: wish the body is constantly clean and bright, like a jade tree; the body is constantly strong and solid…" (Dunhuang documents P2588), which reflects the scene of burning lamps to make a wish in front of the treasure pagoda.

There are two points worth noting in this Sutra illustration: first, special expression modes of the Healing Master are explored. There is a streamline through which the rainbow bridge connects Sanmen, bell towers, scripture towers, and balconies on the front corridor of the Sutra illustration. There is a streamline through which the rainbow bridge connects pavilion-shaped corner towers and balconies on the rear corridor [Figure 12a]. The burning lamp on the balcony and a pair of flagpoles with a floating banner can be considered as burning lamps to pray for good luck and avoid disasters. Second, the hall body has changed to a pagoda, and the pagoda is special-shaped whose upper and lower stories have bent columns. According to the analysis of Xiao Mo, the morphology of this pagoda is a shadow of "inverted bowl," and regarded as esoteric Buddhism with reference to Tahoto (multiple-treasure pagoda) and thus named "esoteric Buddhist pagoda." Considering that the elements of esoteric Buddhism were introduced during the Tibetans' occupation. This assertion may be justified.

4.4 Healing Master Sutra Illustration of Cave 85 in Dunhuang Mogao Caves (Figure 16 in the Late-Tang Dynasty)

In Dunhuang studies, the period of late Tang dynasty is usually demarcated as 848–914when Zhang Yichao led the crowd to rise up and the Tang Imperial Court appointed him regional military governor (Jiedushi) of the Guiyi Arm, also known as the Guiyi Arm period. There are 33 Healing Master Sutra illustrations in the rock caves that were chiseled during more than 60 years of the Guiyi Arm period, reaching a peak. These rock caves were mostly caves of aristocratic families, and many of them were named after the owners of the caves. Representatives are Zhao Yichao Cave 156, Suo Yibian Cave 12 and Zhai Farong Cave 85.

Cave 85 was constructed in the Guiyi Arm period of the late Tang dynasty, and the construction began in the 3rd year of the Xiantong period and ended in the 8th year of the Xiantong period (867). Zhai Farong, the second General Buddhist Commander in the Guiyi Arm, cultivated discipline, meditation, and wisdom, and was a Dunhuang Buddhist leader. Meanwhile, Zhai Farong was also a medical Buddhist monk "proficient in the Shennong Bencao Jing (The Divine Farmer's Materia Medical Classic) and eight medical skills." He practiced medicine for the general public, healing diseases, and promoting the theory of law, with a good reputation. This is the cave of meritorious virtues for celebrating his becoming of General Buddhist Commander.

Figure 16. Healing Master Sutra illustration of Cave 85 in Dunhuang Mogao Caves. Source: *Chinese Rock Cave: Dunhuang Mogao Caves V* by Dunhuang Academy.

The form of this cave belongs to the Buddhist altar-centered type, with three Sutra illustrations on the south wall: Returning Favor Sutra, Amitabha Sutra, and Diamond Sutra illustrations. There are also three illustrations on the north wall: Avatamsaka Sutra, Healing Master Sutra, and Siyi Brahma's Questions Sutra illustrations. The Healing Master Sutra and Amitabha Sutra illustrations are placed symmetrically at the respective centers.

The group of *tiangong louge* in this Sutra illustration belongs to "Two-rise courtyard type with open foreground" [Figure 16]. The foreground is an open composition formed by

a series of seven-treasure platforms rising floor by floor, which abandons depiction of the pond, that is, the notion of "meditation on the water with eight meritorious virtues," resulting from the reflection of water notion in the Western Pure Land illustrations. By comparing it with Cave 148 that emulates the Western Pure Land illustrations [Figure 14], it is possible to see the differences. Its front side is comprised of two hall bodies and two teahouses, and the two hall bodies are arranged side by side each with a hip roof. The two teahouses opposite to each other and both have nine-ridge hall roofs. The front and rear courtyards are separated by a corridor, with the door in the corridor leading to the rear courtyard. There are three-storey wing rooms on the left and right of the hall body in the middle of the rear courtyard. On the left and right of the courtyard are the bell and scripture towers.

4.5 Healing Master Sutra Illustration on the North Wall of Cave 146 in Dunhuang Mogao Caves (Figure 17, in the Five Dynasties)

In Dunhuang studies, the late stage refers to the Five Dynasties (907–979), Song (960–1279), Xixia (1038–1227), and Yuan (1271–1368), spanning four dynasties, but for the regular pattern governing the development of Dunhuang artistic style, it is not a simple dynastic change. Researchers have divided it into two phases: the Cao Painting Academy period of the Five Dynasties and the Song dynasty; the Minority Nationality Regime period of the Xixia and Yuan dynasties [15,16].

Not long after the fall of the Tang dynasty (618–907), Cao Yijin (?–935), administrator of Shazhou and deputy regional military governor (Jiedushi) of Guiyi Arm, took over the Zhang Shi regime. The Cao regime lasted five generations, ruling Hexi for more than 140 years. During this time, it maintained a close relationship with regimes in the Central Plains and preserved institutions and culture in the Central Plains. The Cao family chiseled many new caves and restored plenty of previous caves. There are 29 Eastern Healing Master Pure Land illustrations of that period, the largest number among the Sutra illustrations. To build rock caves, the Cao regime emulated the Central Plains and set up painting academies. "As a batch of highly skilled craftsmen uniformly planned and collectively created works, rock caves chiseled during the period of the Five Dynasties and the Northern Song dynasty have a unique and united style" [15]. Due to the uniform style, in this paper, we analyzed *tiangong louge* of the Cao Painting academy period [Figures 8 and 17], with the Healing Master Sutra illustration of Cave 146 in Mogao Caves as an example.

Figure 17. Healing Master Sutra illustration on the north wall of Cave 146 in Dunhuang Mogao Caves. Source: *Chinese Rock Cave: Dunhuang Mogao Caves V* by Dunhuang Academy.

The form of this carve belongs to the central Buddhist altar back screen type, with four Sutra illustrations on the south wall: Maitreya Sutra, Amitabha Sutra, Saddharma Pundarika Sutra, and Returning Favor Sutra illustrations. There are also four illustrations on the north wall: Questioning Devas Sutra,

Healing Master Sutra, Avatamsaka Sutra, and Siyi Brahma's Questions Sutra illustrations. The Healing Master Sutra and Amitabha Sutra illustrations are placed symmetrically.

By observing *tiangong louge* [Figures 8 and 17] in this Sutra illustration, it can be seen that the degrees of realism have been further improved, with less decorative elements in the imagination. The shapes of the buildings are accurate and the depictions meticulous, such as the upward curvature of the eaves, the owl's-tail-shaped ornaments, doors and windows, hooked railings, table valances, *tiangong louge* has its front courtyard located on the lotus pond, which is obviously an imitation of the notion of "meditation of the water of eight meritorious virtues" in the Western Pure Land illustrations. It was made into a closed foreground, especially with lamp wheels in front of the stairway of Sanmen and banners behind the hall body, which also indicates that this is the Eastern Healing Master Pure Land.

The grouping of *tiangong louge* in this Sutra illustration belongs to "two-rise courtyard type with closed foreground" [Figure 17], with overhead three floors and three doors as the foreground, and one-storey wing rooms on the left and right of the Sanmen. There are round bridge-type stairways in the Sanmen and the wing rooms. The front courtyard has one hall with a hip roof and two teahouses, and the rear courtyard has four teahouses. There are pavilion-shaped towers in the front and back of the corridor, with octagonal pavilion-shaped bell towers and scripture towers in the front, and round pavilion-shaped corner towers at the back.

4.6 Healing Master Sutra Illustration of Cave 7 in the Thousand-Buddha Cave in East Dunhuang (Figure 18, in the Xixia Dynasty)

In the 11th century, the aristocrats of the Dang Xiang ethnicity established the Xixia dynasty (1038–1227) that covered today's Gansu, Shannxi, Ningxia, and other provinces and autonomous regions in China. In nearly 200 years after the establishment of the Xixia dynasty, Dunhuang was basically in its jurisdiction. The rulers of the Xixia dynasty vigorously advocated Buddhism and requested to the Song Imperial Court many times to purchase the Buddhist Tripitaka and to build Buddhist temples widely. As the *Fashi* was published in this period, the forms of the temples mostly and closely adhered to the *Fashi*, which was also reflected in *tiangong louge* in the Healing Master Sutra illustrations. In this paper, only the Healing Master Sutra illustration of Cave 7 in the Thousand-Buddha Cave in east Dunhuang has been taken as an example [Figure 18].

Figure 18. Healing Master Sutra illustration of Cave 7 in the Thousand-Buddha Cave in east Dunhuang. Source: "Medicine Buddha in murals of the Xixia dynasty in east Thousand-Buddha Cave and its aesthetic implication" by Shi Wei.

The foreground of this Sutra illustration is a courtyard in front of the gate, which is comprised of the Sanmen and two teahouses. Therefore, this group naturally belongs to the"Two-rise courtyard type with an open foreground." As its main figure Medicine Buddha is located in the second-rise courtyard, the depiction of this Sutra illustration focuses on the second-rise courtyard, which is a hall with four teahouses. There is a rectangle pond

behind the Sanmen. The Hall and the Sanmen have a nine-ridge roof with double eaves, with an apparently retracted hip. The other individual buildings in the group are elegant and strong, close to the standard set in the *Fashi*. The building groups are highly clustered, with extended central axes, exhibiting the Song-dynasty style of buildings.

5. CONCLUSION

After Buddhism was introduced to China, the"tiangong louge"was a form of buildings based on the blueprint of the Tang and Song buildings and incorporated the notion of "Heaven"in traditional Chinese culture. The *tiangong louge* in the Eastern Healing Master Pure Land illustrations was painted according to the *Sutra of the Master of Healing*, with reference to the composition in the Western Pure Land illustrations, especially the open foreground-type of groupings. But the aims of the *Sutra of the Master of Healing* are to eliminate the sufferings of sentient beings in the real world, heal diseases, remove calamities, and extend life, which have had a profound influence on the design of *tiangong louge* in Sutra illustrations.

Viewed from the elements of individual buildings that constitute *tiangong louge*, the Eastern Healing Master of the Pure Land illustration contains five individual elements in the *Fashi*, except the "tortoise-head porches": hall body, teahouses, corner towers, wing rooms, corridors, only their uses are slightly different. In addition, pavilions, pagodas, Sanmen, bell towers, scripture towers, balconies, and round-bridge stairways, are also included, which aremissing in *tiangong louge* in the *Fashi*. They reflect the individual building elements in the real-world Buddhist temples from the Wei (220–265) and Jin (265–420) dynasties to the early Song dynasty (960–1279).

Viewed from the *tiangong louge* group, it can be divided into two categories and four types: open foreground type with one-rise courtyard, open foreground type with two-rise courtyard, closed foreground type with one-rise courtyard, and closed foreground type with two-rise courtyard.

The *tiangong louge* in the Pure Land illustrations, albeit called "tiangong" (Heavenly Palace), was actually built based on real-world Buddhist temples. Changes that occurred in *tiangong louge* in the Eastern Healing Master Pure Land illustrations from the High Tang era to the Xixia dynasty have sensitively communicated the transformations in Buddhist temples during this period of time.

ACKNOWLEDGMENTS

None.

FUNDING

This study belongs to the General Program of the National Natural Science Foundation of China "Research, Annotation and Explanation on Curtains and Recesses of Xiaomuzuo works in the Yingzaofashi" (51878177) and to the Major Program of the National Social Science Fund of China "Comprehensive Research on Heritages Yingzaofashi of Curtains and Recesses in the 4^{th}–12^{th} Centuries."

CONFLICT OF INTEREST

None.

REFERENCES

[1] He Z. Heavenly Gate, Heavenly Palace, and Tusita Heaven—On the iconographical origin of Maitreya's Tusita Heaven in Mogao Cave 275 [J]. Dunhuang Research, 2016, 2016(1): 1–11.

[2] The Earth Store Sutra and Bhaisajyaguru Sutra. Translated and annotated by Xu Y. 2019, Zhonghua Book Company, Beijing.

[3] Huang J, Zhu Y. Fuzhu in the architecture of the Han Dynasty // Wang G, He C, Li J. Transactions on the history of Chinese architecture: Volume 13. 2016, China Construction Industry Publishing, Beijing, 223–243.

[4] Yang Y. Research on the styles and themes of the Grotto Frescoes in the Sui Dynasty in Dunhuang. 2017, Gansu Education Press, Lanzhou.

[5] Li J. Study on Suoyi Defensive Grottoes in Mogao Grottoes in Dunhuang. 2018, Gansu Education Press, Lanzhou.

[6] Ye L. Buddha tells the Sutra of Maitreya's Ascension and the Sutra of Maitreya's Buddhahoo. 2016, Oriental Publishing House, Beijing.
[7] Xiao M. The Buddhist temple in the murals of the Mogao Grottoes // Dunhuang Academy. Chinese Grottoes: Dunhuang Mogao Grottoes IV. 2011, Cultural Relics Publishing House, Beijing.
[8] Bai H. Sinicization of Buddhist instruments and clothing. 2015, Zhonghua Book Company, Beijing.
[9] Wang Y. The Three Classics of the Pure Land. 2016, Oriental Publishing House, Beijing.
[10] Master Taixu. Pharmacist's lectures. 2014, Shanghai Ancient Books Publishing House, Shanghai.
[11] Zhu Y, Liu J. Investigation on pavilions and covered bridges in the Han Dynasty [J]. Architectural Journal, 2011, 2011(S2): 90–93.
[12] Xiao M. Dunhuang architecture research. 1989, Cultural Relics Publishing House, Beijing.
[13] Li J. Yingzao Fashi, Volume 1. 2017, Forbidden City Publishing House, Beijing.
[14] Liang S. Notes on "Yingzao Fashi" // Liang Sicheng. The complete works of Liang Sicheng: Volume 7. 2001, China Construction Industry Publishing, Beijing.
[15] Dunhuang Research Institute. Chinese Grottoes: Dunhuang Mogao Grottoes IV. 2011, Cultural Relics Publishing House, Beijing.
[16] Huang R. A study on the image of the "Pharmacist Offering Ceremony" in the prosperous Tang Dynasty: Taking the No. 148 Grottoes of Mogao Grottoes in Dunhuang as an example [J]. Rong Bao Zhai, 2017, 2017(4): 148–155.
[17] Luo H. "Eastern Pharmacists' Pure Land Transformation" in Dunhuang frescoes [J]. Dunhuang Studies, 1989, 1989(2): 5–18, 126.
[18] Wang H. An investigation of the images of pharmacists from the Sui Dynasty to the early Tang Dynasty in Dunhuang // Shao H, Xiang Q. Art history research: Volume 2. 2000, Sun Yat-sen University Press, Guangzhou, 293–327.
[19] Zhao S. The art of Dunhuang Sutra Illustrations in the Sui Dynasty [J]. Dunhuang Research, 2018, 2018(3): 1–8.
[20] Dunhuang Research Institute. Chinese Grottoes: Dunhuang Mogao Grottoes V. 2013, Cultural Relics Publishing House, Beijing.
[21] Gong W. Nirvana and the Palace of Pure Land: A study on Cave 148 of Mogao Grottoes in Dunhuang [D]. 2004, Lanzhou University, Lanzhou.
[22] Xiao M. The architectural style and appearance of the Tang Dynasty: What I saw and thought from the Dunhuang frescoes [J]. Literature and Art Studies, 1983, 1983(4): 128–140.
[23] Wang Y. Sutra of the Master of Healing & Buddha of the Master of Healing in Xixia Frescoes [J]. Journal of Ningxia University (Social Science Edition), 2003, 2003(1): 14–16, 34.
[24] Shi W. The Medicine Buddha and its aesthetic implications in the Western Xia murals of the East Thousand Buddha Caves // Du J. Xixia School. 2014, Shanghai Ancient Books Publishing House, Shanghai, 254–259.
[25] Mi D. On the contraposition of the illustrations of the Western Paradise Sutra and of the Bhaisajya-guru Sutra in Dunhuang Wall Paintings [J]. Dunhuang Research, 2013, 2013(5): 51–59.
[26] Sima Q. Shih Chi. 2019, Zhonghua Book Company, Beijing.
[27] Dunhuang Institute of Cultural Relics. Chinese Grottoes: Dunhuang Mogao Grottoes III. 2011, Cultural Relics Press, Beijing

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2022 Volume 4 Issue 2: 1-22 *Secondary Publication*

Photos of Liang Sicheng and His Colleagues from the Society for Research in Chinese Architecture (Zhongguo Yingzao Xueshe) while Surveying and Mapping Historic Architecture

The Memorial Hall of the Society for Research in Chinese Architecture

Correspondence to: The Memorial Hall of the Society for Research in Chinese Architecture. Email: zgyzxs1930@163.com

Liang Sicheng and Lin Huiyin surveying and mapping the North Tomb, Shenyang, Liaoning Province, China (1929)

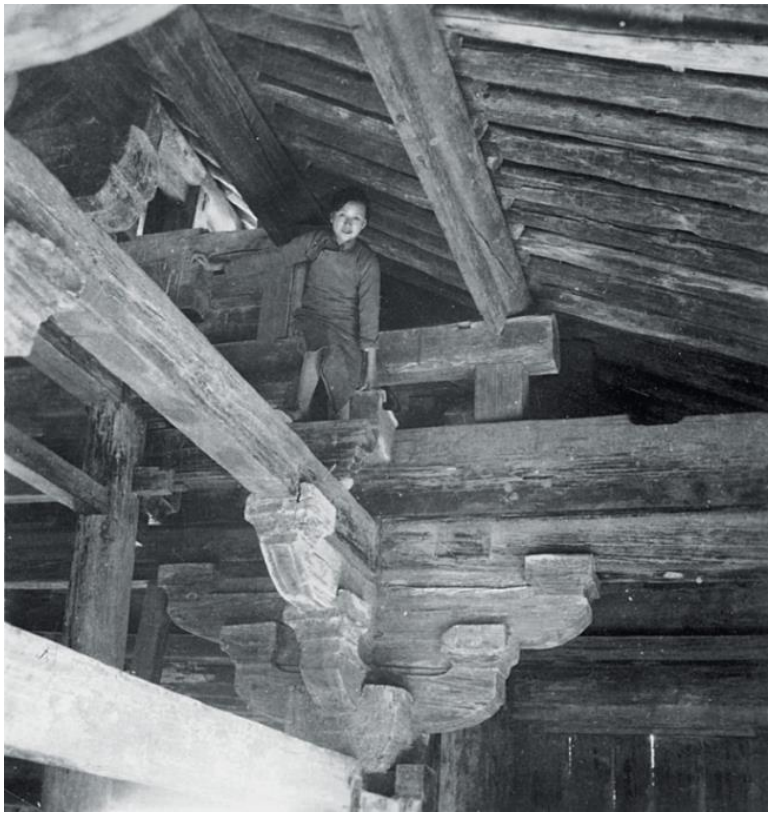
Liang Sicheng surveying and mapping the Dule Temple, Ji County (now Jizhou District), Tianjin, China (1932)

This article belongs to Secondary Publication Section, and is translated from an article published in *Journal of Architectural History* 《建筑史学刊》. Citation of primary version: Museum in Memory of Society for Research in Chinese Architecture, 2021, Photos of Liang Sicheng and his colleagues from the Society for Research in Chinese Architecture (Zhongguo Yingzao Xueshe) while surveying and mapping historic architecture. *Journal of Architectural History*, 2(2): 156–176. http://dx.doi.org/10.12329/20969368.2021.02020

Liang Sicheng surveying and mapping the Hall of Guanyin (Avalokitasvara) of the Dule Temple, Ji County (now Jizhou District), Tianjin, China (1932)

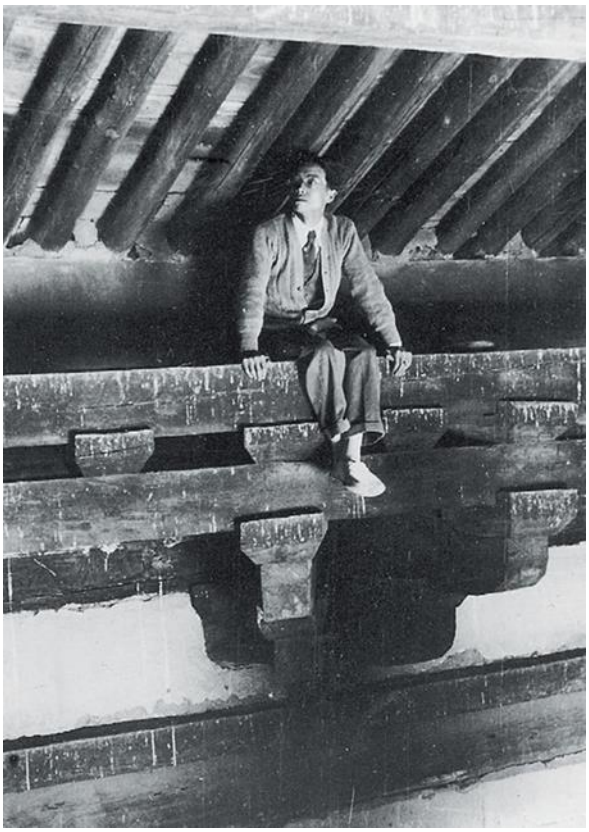
Liang Sicheng (front row, first from right) surveying and mapping the Hall of the Three Great Bodhisattvas in the Guangji Temple, Baodi (now Baodi District), Tianjin, China (1932)

Liang Sicheng surveying and mapping the hall for the revolving sutra repository in the Longxing Temple, Zhengding County, Shijiazhuang, Hebei Province, China (1933)



Lin Huiyin conducting a survey on the bell tower in the Kaiyuan Temple, Zhengding County, Shijiazhuang, Hebei Province, China (1933)

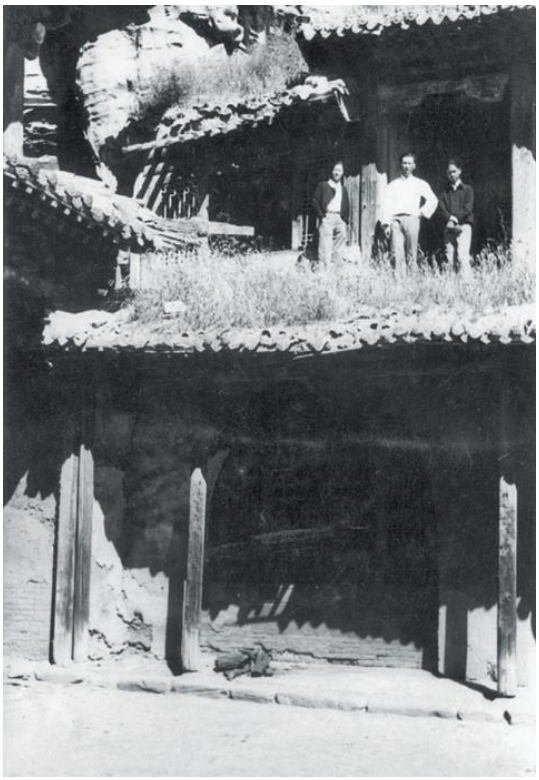
Liang Sicheng surveying and mapping the Three-Saint Hall in the Shanhua Temple, Datong, Shanxi Province, China (1933)



Liang Sicheng carrying out a survey on the Pavilion of Samatabhadra in the Shanhua Temple, Datong, Shanxi Province, China (1933)

Mo Zongjiang (first from the left), Lin Huiyin (second from the left) and Liu Dunzhen (third from the left) on the way to Datong, Shanxi Province for research on historic architecture (1933)

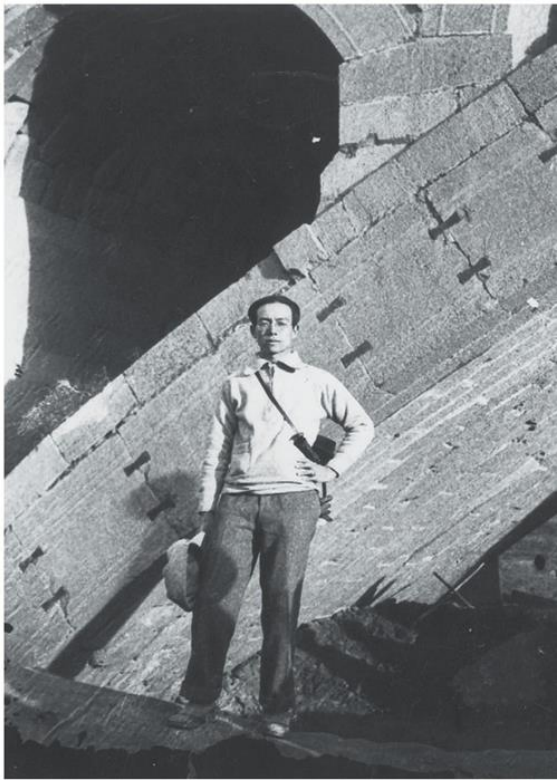
Lin Huiyin conducting research on the Yungang Grottoes, Datong, Shanxi Province, China (1933)



Lin Huiyin (left), Liu Dunzhen (middle) and Mo Zongjiang (right) conducting research on the Yungang Grottoes, Datong, Shanxi Province, China (1933)

Liang Sicheng (upper), Liu Dunzhen (middle) and Mo Zongjiang (lower) carrying out research on the Yungang Grottoes, Datong, Shanxi Province, China (1933)

Mo Zongjiang surveying and mapping the Sakyamuni Pagoda of Fogong Temple, Ying County, Shanxi Province, China (1933)



Liang Sicheng surveying and mapping the Zhaozhou Bridge (Anji Bridge), Zhao County, Shijiazhuang, Hebei Province, China (1933)

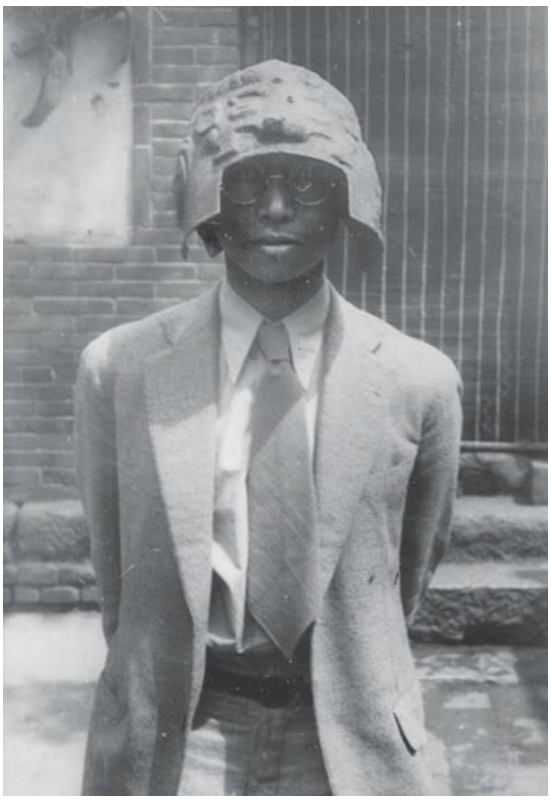
Lin Huiyin conducting research at Lingyan Temple, Xiaoxiang Village, Fenyang, Shanxi Province, China (1934)

Lin Huiyin sitting on the flying bridge across the fish pond in front of the Hall of the Holy Mother in the Jinci Temple, Taiyuan, Shanxi Province, China (1934)

Research on historic architecture in Jin Fen: Liang Sichang and Lin Huiyin sitting in the front cart and Fei Weimei (Wilma Canon Fairbank) on the rear cart (1934)

Liang Sicheng conducting research on the mausoleums of the Southern Dynasties, Nanjing, Jiangsu Province, China (1934)

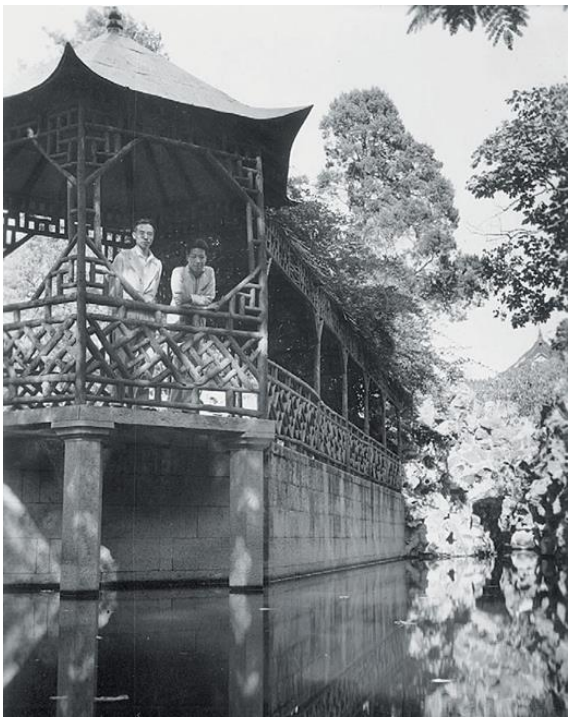
Group photo of Liang Sicheng (right) and Liang Siyong (left) on the archaeological site (1935)



Liang Sicheng carrying out research on the archaeological site of the Yin Ruins, Anyang, Henan Province, China (1935)

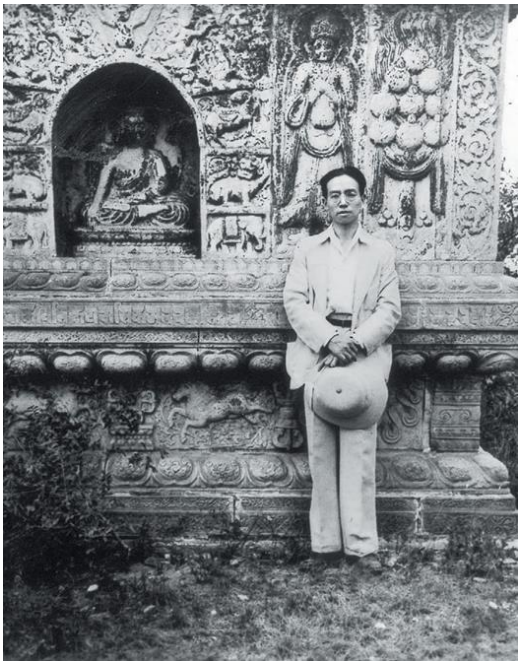
Liang Sicheng conducting research on the Garden of Pleasance (Yi Yuan), Suzhou, Jiangsu Province, China (1935)

Liang Sicheng conducting research on the Humble Administrator's Garden, Suzhou, Jiangsu Province, China (1935)

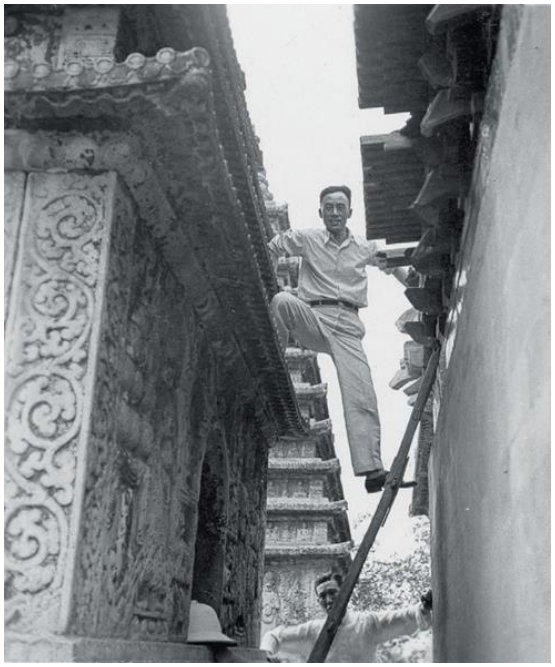


Liang Sicheng (left) conducting research on the Lion Grove Garden, Suzhou, Jiangsu Province, China (1935)

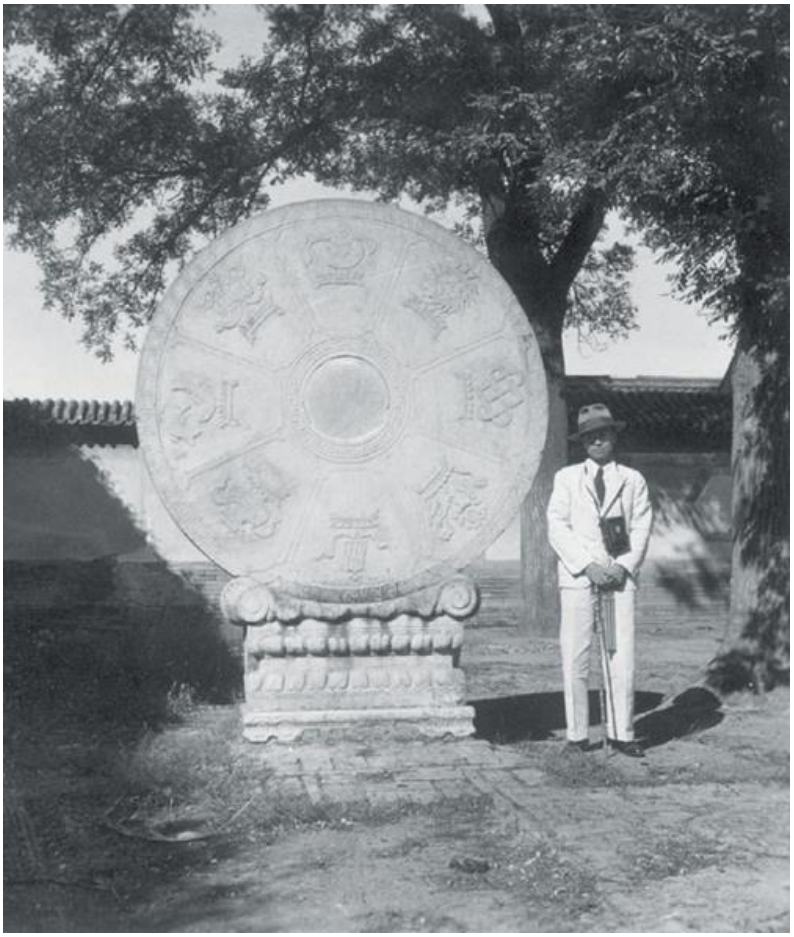
Liang Sicheng and Lin Huiyin on the roof of the Hall of Prayer for Good Harvests in the Temple of Heaven, Beijing, China (1935)



Liang Sicheng surveying and mapping the Vajrāsana-type Stūpa in the Zhengjue Temple (Five-Pagoda Temple), Beiping (now Beijing), China (1935)



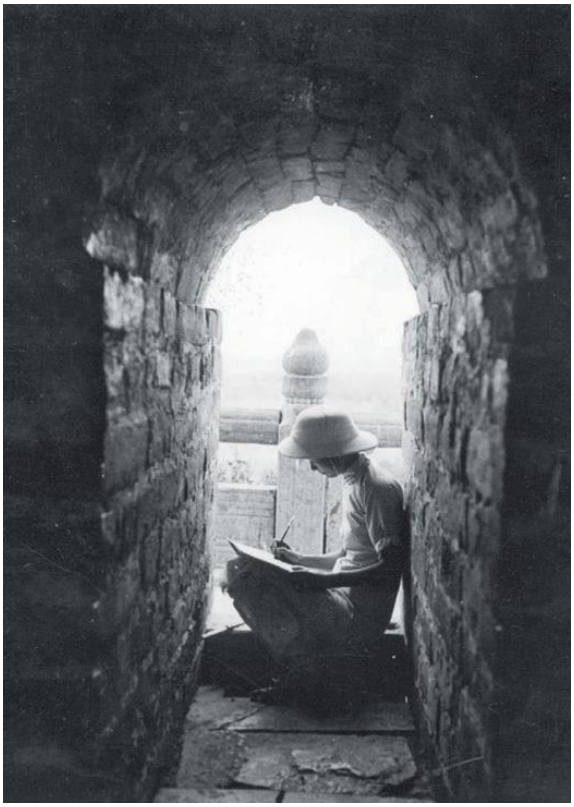
Yang Tingbao (upper) and Liu Dunzhen (lower) conducting surveys and making maps on the Vajrāsana-type Stūpa in the Zhengjue Temple (Five-Pagoda Temple), Beiping (now Beijing), China (1935)



Liang Sicheng performing research on the Tianning Temple, Beiping (now Beijing), China (ca. 1935)

Liang Sicheng and Lin Huiyin on their field trip to Shandong Province, China (1936)

Liang Sicheng and Mai Yanzeng conducting a survey on the Tianlongshan Grottoes, Taiyuan, Shanxi Province, China (1936)



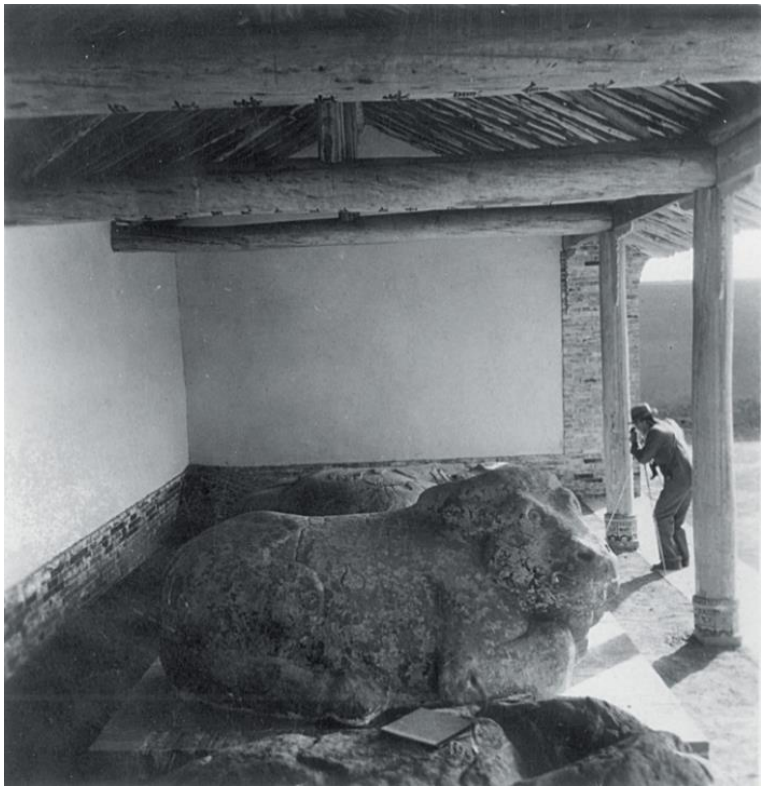
Lin Huiyin surveying and mapping the pagoda of the Xinglong Temple, Ziyang, Shandong Province, China (1936)

Liang Sicheng surveying and mapping the Jici Temple, Taiyuan, Shanxi Province, China (1936)

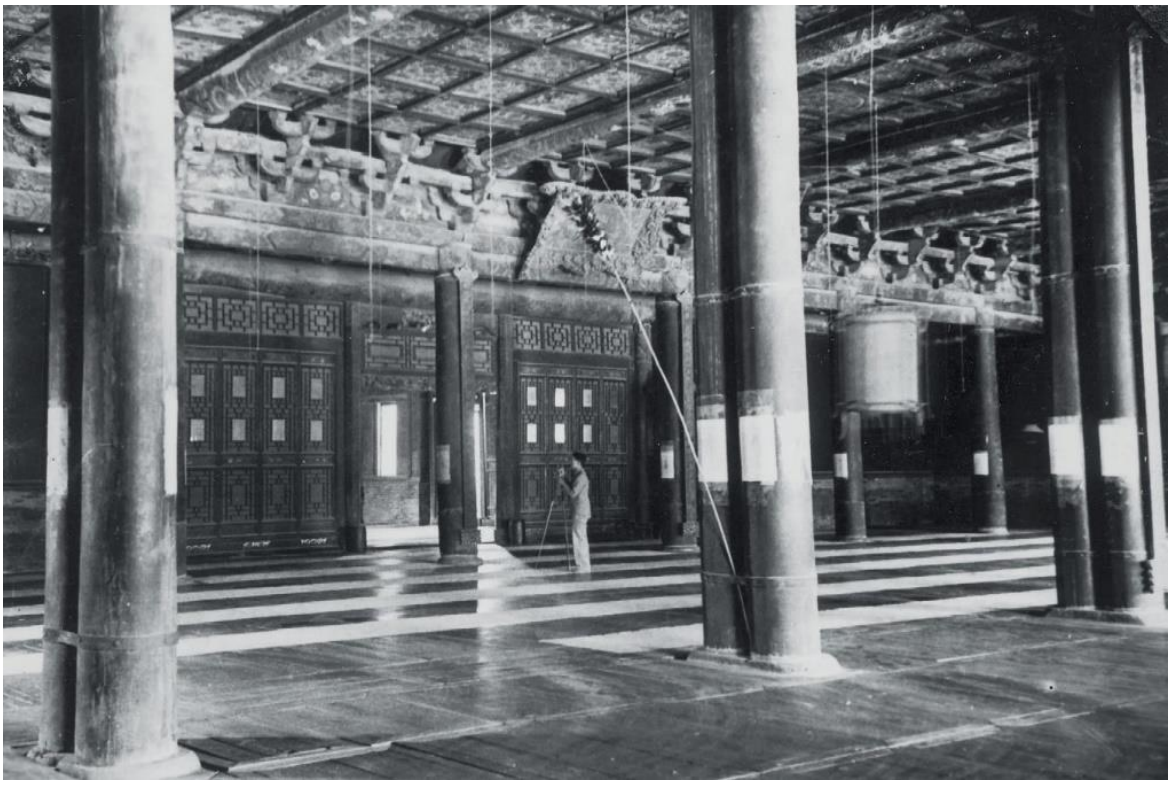
Liang Sicheng surveying and mapping the main hall of the upper temple in the Guangsheng Temple, Zhaocheng, Hongtong County, Shanxi Province, China (1936)

Liang Sicheng standing in front of the Lingxing Gate (a type of gate used in the construction of Confucian temples) of the Temple of Confucius, Xinjiang County (formerly Jiangzhou), Shanxi Province, China (1936)

Liang Sicheng (middle) and Mo Zongjiang (left) *et al.* conducting research on the Shunling Mausoleum in Xianyang, Shaanxi Province, China (1936)

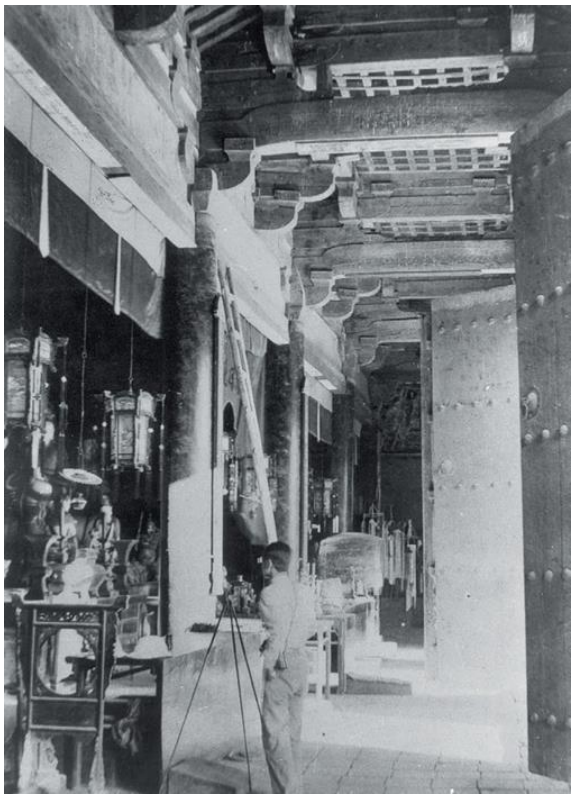


Liang Sicheng carrying out a survey on the rock carvings at the Tomb of Huo Qubing, Xingping, Shaanxi Province, China (1936)

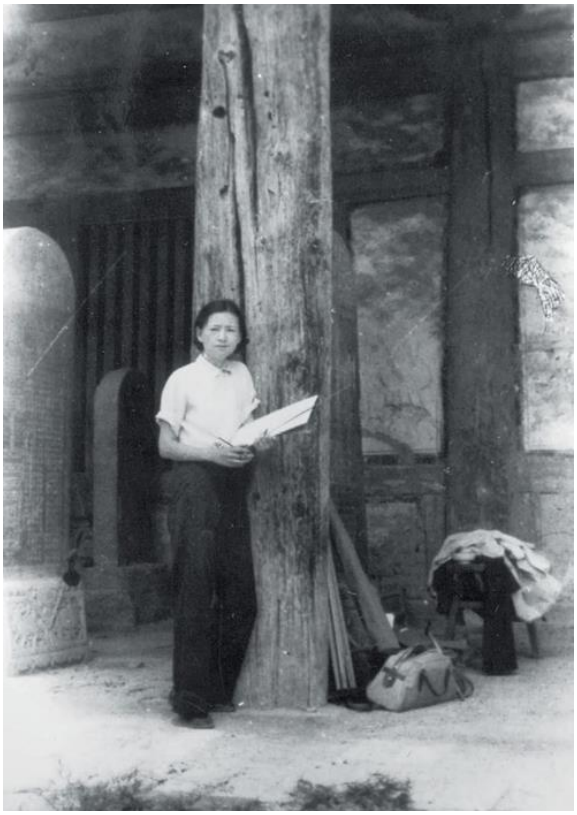


Liang Sicheng surveying and mapping the Worship Hall of the Mosque in Huajue Lane, Xi'an, Shaanxi Province, China (1937)

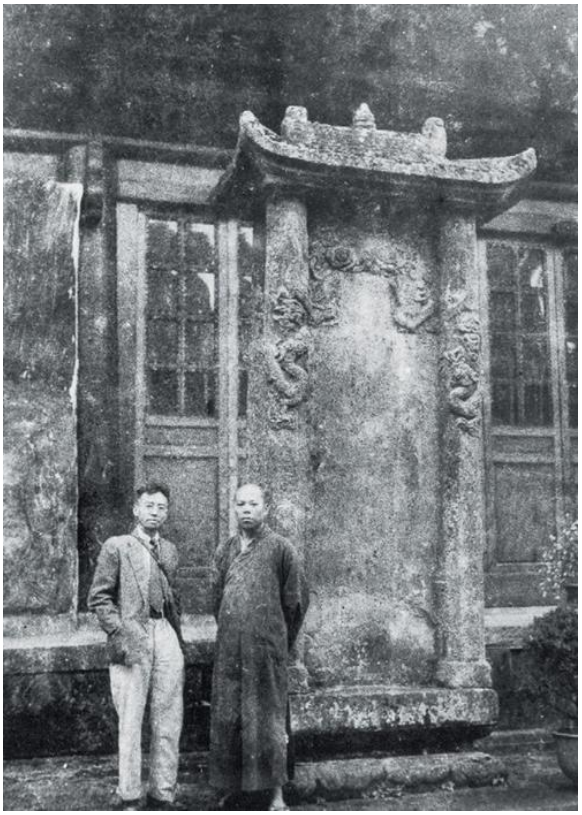
Lin Huiyin at the main hall of the Foguang Temple in Mount Wutai, Wutai County, Xinzhou, Shanxi Province, China (1937)



Liang Sicheng surveying and mapping the main hall of the Foguang Temple in Mount Wutai, Wutai County, Xinzhou, Shanxi Province, China (1937)



Lin Huiyin surveying and mapping the hall of the Yuhua Palace in the Yongshou Temple in Yuci (now Yuci District, Jinzhong), Shanxi, China (1937)



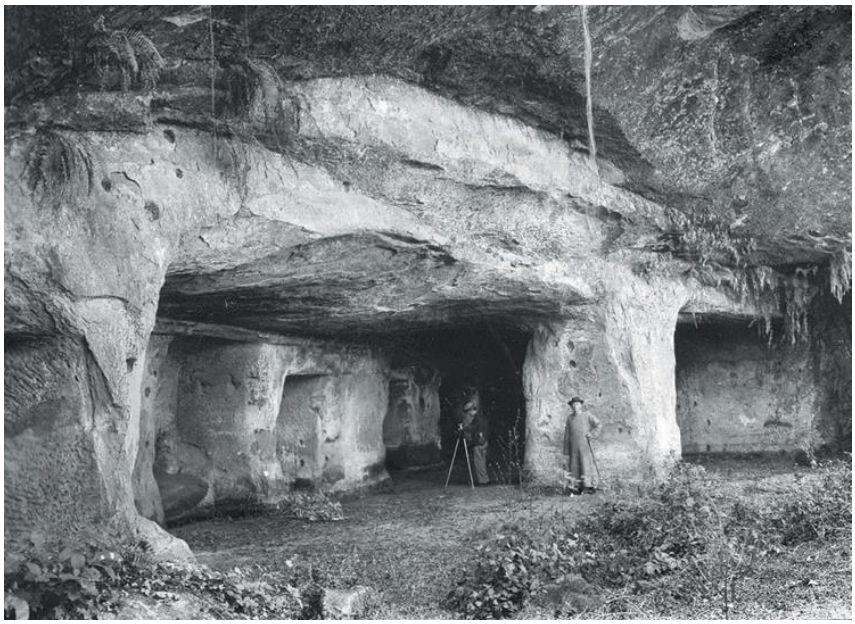
Liang Sicheng (left) conducting research on the Jinyun Temple, Ba County, Sichuan Province, China (1939)

Liang Sicheng carrying out research on the Sutra Library in the Manjushri Monastery, Chengdu, Sichuan Province, China (1939)

Liang Sicheng surveying and mapping Gaoyi's Tomb Tower, Ya'an, Sichuan Province, China (1939)

Liang Sicheng (left) and Chen Mingda (right) surveying and mapping Gaoyi's Tomb Tower in Ya'an, Sichuan Province, China (1939)

Liang Sicheng (back facing the camera) surveying and mapping the Gaoyi's Tomb Tower in Ya'an, Sichuan Province, China (1939)



Liang Sicheng (left) conducting research on the Cliff Tombs in Baiya, Leshan, Sichuan Province, China (1939)

Liang Sicheng surveying and mapping the Pingyangfujun's Tomb Tower, Mianyang, Sichuan Province, China (1939)

Liang Sicheng (left) and Chen Mingda (right) surveying and mapping a nameless tomb tower in the north of the Zhao Shrine in Qu County, Sichuan Province, China (1939)

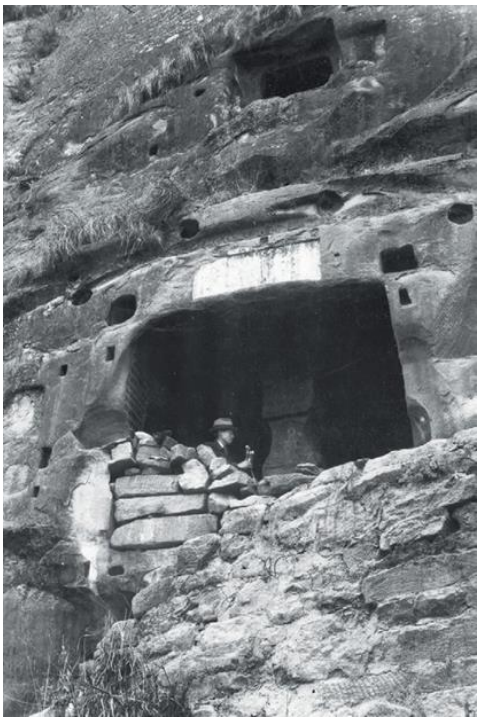
Liang Sicheng (first from the right) surveying and mapping a nameless tomb tower at Lanshuiqiao (Water blocking bridge) in Qu County, Sichuan Province, China (1939)

Liang Sicheng (right) and Mozongjiang (left) surveying and mapping the Shenfujun's Tomb Tower in Qu County, Sichuan Province, China (1939)

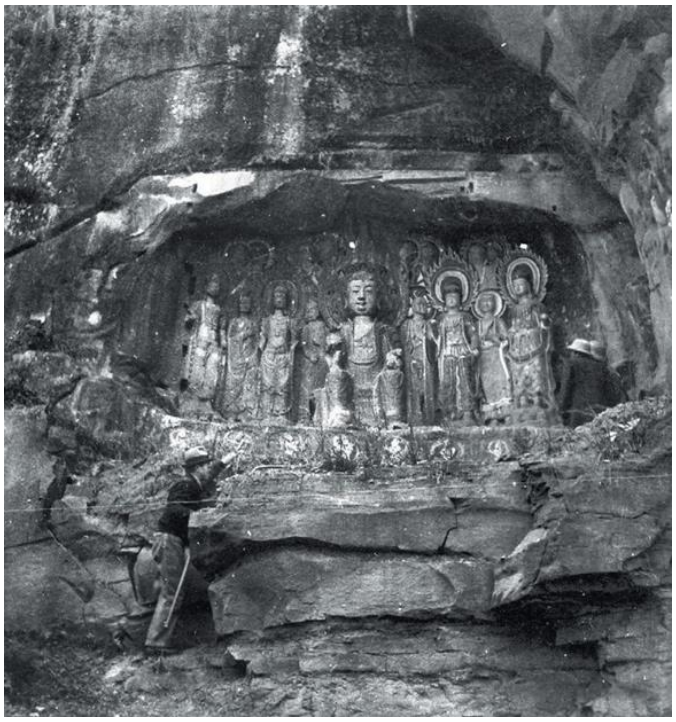
Liang Sicheng surveying and mapping a nameless tomb tower in Wangjiaping, Qu County, Sichuan Province, China (1939)

Mo Zongjiang (right) and Chen Mingda (left) surveying and mapping a nameless tomb tower in the Zhao Shrine in Zhaojiaping, Qu County, Sichuan Province, China (1939)

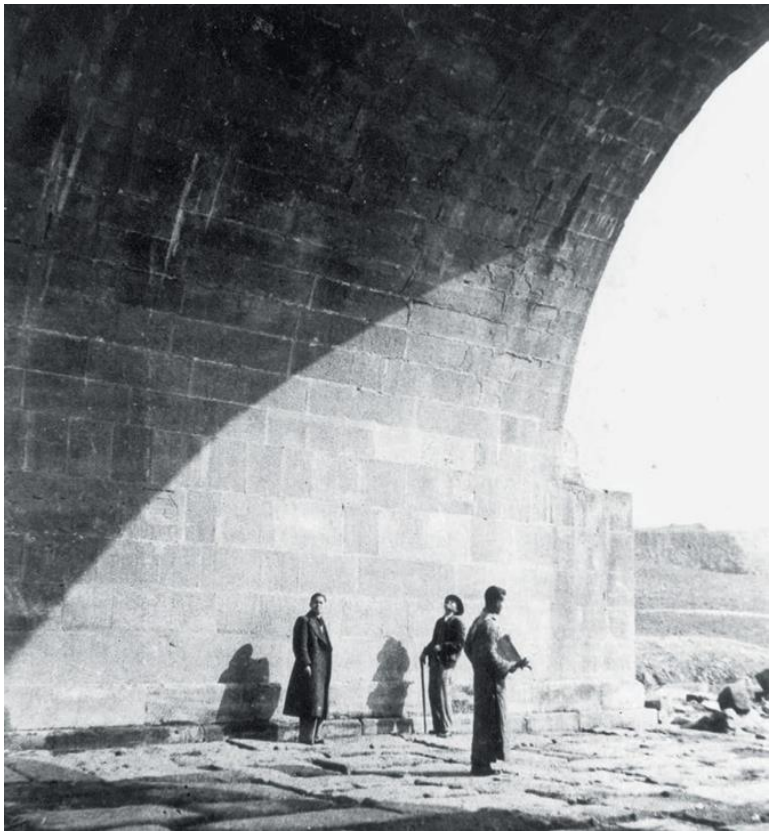
Liang Sicheng (left) *et al.* conducting research on the Thousand-Buddha Cliff in Guangyuan, Sichuan Province, China (1939)



Liang Sicheng carrying out research on Huangze Temple in Guangyuan, Sichuan Province, China (1939)



Liang Sicheng conducting research on the Thousand-Buddha Cliff in Mount Qingya in Shuanglongchang, Langzhong, Sichuan Province, China (1939)



Liang Sicheng (middle), Chen Mingda (left) and Mo Zongjiang (right) conducting research in Nanchongqiao (Nanchong Bridge), Sichuan Province, China (1940)

Liang Sicheng carrying out research on the Fowan Cliff Stone Sculptures of the Dazu north cliff, Dazu (Dazu District, Chongqing), Sichuan Province, China (1940)

Liang Sicheng carrying out research on the Fowan Cliff Stone Sculptures of the Dazu north cliff, Dazu (Dazu District, Chongqing), Sichuan Province, China (1940)

Liang Sicheng making maps at the studio of the Society for Research in Chinese Architecture in Lizhuang, Nanxi, Sichuan Province, China (1940s)

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Journal of Chinese Architecture and Urbanism

2022 Volume 4 Issue 2: 1-8 *Book Review*

Chinese Exceptionalism in Architecture and Urban Design: A Book Review

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ABSTRACT

This essay reviews three books on contemporary Chinese urbanism. The first book, *Designing Reform*, understands the exceptionalism of Chinese reform through architectural evidence. The second book, *The Shenzhen Experiment*, further argues for the exceptionalism and non-replicability of Shenzhen reform. The third book, *The City After Chinese New Towns*, similarly highlights the unprecedentedness of Chinese new towns. These three recent publications collectively aim to demystify contemporary Chinese urbanism, and have done so with a sensibility towards space, geography, materiality, and infrastructure. These authors and editors are mainly architectural researchers leveraging disciplinary contributions to the discussion of post-socialist China. In turn, they have also contributed to the field of architecture and urban design with rich case studies in China. This review essay aims to understand (i) their geographical and spatial perspectives, (ii) their architectural design perspectives, and (iii) how they address social justice issues. It seeks to formulate contemporary Chinese urbanization as an object of inquiry, to "exceptionalize" Chinese phenomena, and to argue for the pedagogical contribution of Chinese case studies to architecture and urban design.

Keywords: Chinese new town, reform and opening-up, political economy, hotel, neoliberalism, Shenzhen

The City After Chinese New Towns: Spaces and Imaginaries from Contemporary Urban China. By Michele Bonino, Francesca Governa, Maria Paola Repellino, Angelo Sampieri (Eds.). Basel, Birkhauser. 2019, 240 pp. ISBN 9783035617658

The Shenzhen Experiment: The Story of China's Instant City. By Juan Du. Cambridge, Harvard University Press. 2020, 384 pp. ISBN 9780674242227

Designing Reform: Architecture in the People's Republic of China, 1970-1992. By Cole Roskam. New Haven, Yale University Press. 2021, 296 pp. ISBN 9780300235951

1. INTRODUCTION

David Harvey famously uses "Neoliberalism 'with Chinese Characteristics'" to describe China's economy under Deng Xiaoping's leadership in the late 1970s. The post-Mao movement broadly known as Reform and Opening-up, manifests in "the construction of a particular kind of market economy that increasingly incorporates neoliberal elements interdigitated with authoritarian centralized control" (p. 120). Harvey understands China as embarking "its own peculiar path" (p. 122), seeking to reconcile a socialist banner with capitalist class power, while being part of a global history of Western-led neoliberalism [1]. These three publications are chosen as they expand on this Chinese peculiarity through geographical and architectural observations, and argue for a third path beyond the outmoded Cold War binary of Western capitalism and Soviet socialism. Echoing the title of the article, Chinese exceptionalism is a lens that spreads across all the books concerned. This paper expands on how this theme is explored using disciplinary evidence, while having interdisciplinary evidence on contemporary Chinese scholarship. This review is done through close readings of texts and referencing other seminal literature in this field.

2. SPACE

This section examines how the three books frame spatial transformations as defining the expression of Chinese exceptionalism. Spaces are defined as both naturally occurring (natural and historical landscapes) and as designed (authored and unauthored architectural transformations).

2.1 Spaces in Zhaoqing, Zhengdong, and Tongzhou

Architect and professor Michele Bonino, and editors Francesca Governa, Maria Paola Repellino, and Angelo Sampieri believe that by rejecting the conformity to a Western category, one could free impressions of urban China of Western preconceptions of what constituted a city, and question every element that made the city. This "Chinese exceptionalism" applied to urbanization thus constitutes a "third space" worthy of its own analytic apparatus (p. 20) [2], warranting a new set of lexicons for describing and designing urban spaces in a Western-dominated discourse, much of which lie within their analysis of Chinese new towns.

For Governa, Chinese New Towns are the spatial embodiment of such exceptionalism. Governa noted that they were "relational spatialities." "They cannot be delimited; they are neither close nor static; they continually shift the fine line of distinction between urban and rural" (p. 224) [2]. Governa identifies the ability of Chinese New Towns to challenge rigid binaries of the Western urbanization discourse. As Brenner and Schmid seminally argue, one of the most delimiting binaries to talk about development are that between the urban and the rural; they instead propose a planetary urbanism model that views urbanization not as a category but a process [3]. As evident in the title, *The City After Chinese New Towns*, the editors were clearly searching for insights from these new spaces for the larger discussion on China. The contributors were tasked to examine three case studies, namely Zhaoqing, Zhengdong, and Tongzhou. This selection is emblematic

but not exhaustive of the nuanced nature of Chinese New Towns. Astrid Safina studied Zhaoqing, a third-tier city situated on the Western edge of the Pearl River Delta, one of the fastest growing regions in China. She notes that a major takeaway from this case study is the promotion of an "ambiguous polycentrism" (p. 107) [2], that challenges the reductive frameworks of centralization and decentralization. Leonardo Ramondetti studied a Henan province infrastructural hub Zhengdong that represents the inlands, a less privileged area for the studies of reform. Instead, he frames Zhengdong as an interesting mixture between "urban entrepreneurialism" and the "so-called socialist countryside planning" (p. 121) [2], a region highly receptive of spatial innovations, including renowned architect Kisho Kurokawa's polycentric city plan. Filippo Fiandanese researched Tongzhou, an industrial suburb of Beijing. Responding to Soviet ideologies, he formulates Tongzhou as the regional convergence of political centeredness and industrial production, which challenges the utilitarian land use segregation of Western conventions. The aforementioned contributors heed to the editors' call for proclaiming "Chinese characteristics" in their own rights [2]. In writing about the marginal and up-and-coming spaces of China, they identify critical innovations, the urbanistic specificities of which are suggestive of larger ideological shifts.

2.2 Spaces in Shenzhen Special Economic Zone

Architect and professor Juan Du (2020) tackles Deng's famous theory, "Socialism with Chinese Characteristics," on which Harvey's term is based. She quotes *The Story of Spring*'s (famous propaganda song) lyricist Jiang Kairu in saying, "in the past, we viewed the planned economy and the market economy as enemies out to kill each other, unable to get along. Within the circled area, this flourishing development subverted that notion and created a miracle of human civilization. This is the significance of this circle" (p. 39) [4]. This quote illustrates two things at the same time. First, it attests to a conceptual exceptionalism of Shenzhen in embodying ideological extremes. Second, it centers on how Shenzhen is mythologized as "a circle by the sea," a "zone of exception" (p. 39) [3], and how this Dengist popular narrative could often be misconstrued for replicating the Shenzhen model in any geography, China or elsewhere.

Du reveals that this zone of exception is actually exceptional in its conception. Fighting against the misconception that Shenzhen could be a "circle" anywhere in the world, a vacuum space void of irrelevance, Du notes instead that Shenzhen's geographical history and reality had been instrumental to its success. She gathers that the natural and human geography are factored into any theorization of Shenzhen as a "Special Economic Zone." She theorizes Shenzhen not as a clean slate, but as a place of "centuries-old agrarian spatial patterns" (p. 60) [3], going as far back as 100 BCE. She traces the indigenous village settlements that have existed way beyond 1979, a year commonly noted for the "establishment" of Shenzhen, and she understands how these settlement patterns has impacted the city's growth and development into an economic capital as it is today. In addition, she maintains that the 1982 Master Plan, an early masterplan for Shenzhen and indeed China, considered environmental resources shaped by these settlements in nature, including "rivers, canals, and marshes" central to irrigation of rice fields and fishery ponds. Du thus refutes Shenzhen to be lumped together with the world's neoliberal ports such as Rotterdam and Hamburg that Easterling proposes in *Enduring Innocence* [5], or with China's own Special Economic Zones in the 1980s including Xiamen, Shangtou, Zhuhai, and Hainan in *Extrastatecraft* [6]. This provocation comes from a deep understanding of Shenzhen's uniqueness, stemming from both coincidental and artificial conditions miraculously converging in the physical territory.

2.3 Spaces in Beijing and China beyond

Professor of architectural history, Cole Roskam, clarifies early in the book that "reform was not an exercise in neoliberalism" (p. 17) [7]. He cautions against the blind application of the global neoliberal turn in the 1970s and 1980s, and instead notes the specificity in Chinese society, including its socialist roots and authoritarian ruling. He writes, "reform… was above all, an act of unprecedented creativity" (p. 250) [7], as he details the innovative state apparatuses and public-private collaboration models that came out of a spirit of experimentation and improvisation, birthing spaces of unlikely consequences. As he perceptively calls early on, "architecture helps to produce contributing citizens of societies and the social structures upon which people depend, regardless as to whether those structures are capitalist or socialist in their ideological composition" (p. 14) [7] — simply put, architecture is not the same as ideology. Echoing this quote, Roskam's spatial analysis does not try to pigeonhole spaces into global, ideological patterns, but digs deep in everyday practices in which common people transform and adapt spaces into individual, concretized pockets of expediency, makeshift-ness, and contingencies. Roskam offers a phenomenal account of a post-socialism landscape brimming with Chinese characteristics. One of the most illustrative moments is his analysis of the early reform choreography that the government carefully curated to foreign guests coming to experience socialist China. It includes exclusive hotels with elaborate amenities, those that were considered bourgeois luxuries in the then impoverished China. He takes fascination in the ideological chasm contained in an urban space, documenting the spatial protocols such as hotel security and built barriers of access, segregating the proletarian locals from foreign visitors. He contrasts between elaborate hotel interiors, such as the East Addition Dining Room of Beijing Hotel, with the outside geography suffering from the Cultural-Revolution-induced poverty. This image he constructs move us away from a simplistic category of neoliberal freedom to a situatedness of uneven economic and social agendas. He analyzes that Chinese exceptionalism is a spatial project from the start, and as is known today that it continues to implicate spatially.

3. ARCHITECTURAL TYPOLOGY AND AUTHORSHIP

The last section concludes spatial observations and elaborates on how the three books use architectural and urban design examples in further explicating Chinese exceptionalism. Here, architecture is defined through a cross-examining reading between the interrelated lenses of typology and authorship.

Architectural historian and critic Anthony King's perspective is drawn to unfold the infrastructural qualities of architectural practice, which as he defines, the former both shaped and is shaped by the latter. In *Building and Society*, he poses first and foremost two questions at once: "What can we understand about a society by examining its buildings and physical environment? What can we understand about buildings and environments by examining the society in which they exist" (p. 1) [8]? Rather than treating architecture as aesthetic objects, King reacts by highlighting architecture as simultaneously socially conditioned and conditioning society. This influential stance is undeniably essential in understanding these authors.

The interrelated questions of architectural type and authorship surface in discussions of an architectural infrastructure. Type and authorship are in fact two faces of the same question for architecture. Consider Mario Carpo's provocation of conceiving an authorial ambition of architecture parallel to a process of technological advancements [9], together with Anthony Vidler's invitation to think typologies through a need for an ontological validation [10], both questions point to a consolidation of architectural expertise and institution of knowledge as politically motivated. These authors tackle this double emergence of architectural type

and authorship within the exceptionalist concept of Chinese reform, the deductions of which challenge the Western self-referential system of knowledge. Therefore, these books make contributions not only to Chinese studies, but also to the architectural field where a Western perspective is dominant.

3.1 Architecture in Chinese new towns

The City After Chinese New Towns notes the emergence of architectural typologies around the same time expertise emerged in the new towns. The editors foreground "spaces" that have "their own functional and aesthetic centrality" (p. 131) [2], including exhibition halls, high-rise apartments, underground spaces, and urban parks. Repellino suggests exhibition halls as spaces that facilitate the circulation of an architectural commodity in a speculative housing market. These spaces host mock-ups, models, renderings, and other architectural representational forms, and are visited by the public, authorities, developing companies and agencies. Alessandro Armando and Francesco Carota categorize high-rise apartments as a depository of expertise, as common unit types and layout logics recurred in a trend of housing commodification. In new towns, real estate companies commission assignments that emphasize speed, feasibility, and profitability. Valeria Federighi and Filippo Fiandenese single out underground spaces as crucial to new towns. They remark that a well-designed underground that successfully integrated infrastructural elements like parking and subway networks achieves a market efficiency for these projects (p. 156) [2]. Finally, Bianca Maria Rinaldi reviews the role of urban parks in satisfying China's "virtuous urban model, focused on sustainability and capable of tackling environmental risks" (p. 167) [2]. A display of environmental awareness through green spaces is tasked to satisfy a governmental mandate.

The emergence of expertise on these spaces in new towns is mapped against seismic changes in architectural practices in China. In Armando's and Carota's account of high-rise apartments, they note the diminishing agencies of architects as they are tasked to replicate features and compositions of commercially successful projects (p. 147) [2]. Put differently, these apartments within new towns tend to design themselves, either as a result of stringent governmental regulations on the design of units, or the inflexible and highly predictable demands of Chinese consumers. Apartments are thus designed as generic spaces, assembling "minor differences in their spatial and architectural features" that are abstracted products (p. 147) [2]. Bonino echoes this view by noting the influence of commodification on architectural production. He compiles, on one hand, architectural mimicry examples such as the miniature world tour in Lanzhou New Area or an Eiffel Tower replica in Tianducheng New Town (Sky City), and on the other hand, highly branded projects like the Zhengzhou Kurokawa urban design and a Xiaoqing urban park competition that brought together designers like Standard Architecture, Vector Architects, Pei Zhu, Teamminus, and so on (p. 99) [2]. In both scenarios, architectural authorship either reproduces or produces a marketable iconicity, as architects recede to having no real agency in designing these new towns.

3.2 Architecture in the Special Economic Zone

Du's chapter "Towers by the Hong Kong Border" unpacks the tower typology that dominates Shenzhen's skyline and public image. She understands typology as a contentious category based on a discriminatory definition of expertise that excludes the contribution of the subaltern. She narrates the early establishment of Shenzhen in the late 1970s and early 1980s, where Shenzhen Infrastructure Corps were among the first builders to build towers in the city. However, behind the typological triumph, Du documents the labor-intensive constructions and the lack of shelter for the migrant workers. Comrades such as Yang Hongxiang were living in regiments that offered horrific living conditions while

constructing Electronics Tower, "First Tower in Shenzhen" (p. 163) [4]. More importantly, she notes the towers work debuted neoliberal work contracts with employees, as well as "a variable pay system and floating wages" (p. 166) [4] that quickly assumed local and national importance as a precedent of labor conditions. She acutely reads that the rise of tower typology accompanied an emergent financial model that spearheaded labor exploitation, spelling an "end of the communist Iron Rice Bowl policy" (p. 167) [4] both within and beyond architecture.

Du's discussion on authorship followed a similar logic. Overall, she notes the alternative lens of history that deviates from official narratives and popular discourses. In addition to the ignored perspectives of construction workers, she notes that tower as a new typology in China also omitted the contributions of indigenous urban villagers in Shenzhen. She uses the example of Kingkey Financial Tower (KK100) as a case study of such omission. She ridicules British architect Sir Terry Farrell, who is hailed as the single author of this architectural centerpiece. Instead, she outlines the violence behind the displacement of Caiwuwei Village, where a house protested vehemently against the forced land acquisition as a "nail house" (holdout). Subsequently, she argues that Caiwuwei urban villagers like nail house owner Zhang Lianhao, are co-authors to Shenzhen's shinning towers and development. In her convincing account, she accredits urban villages for providing timely shelters for migrant workers in Shenzhen factories (an appropriate and affordable alternative to poor workers' dormitories) during Shenzhen's most ambitious phase of industrializations. Du rejects an advanced capitalist mindset to owe buildings to single authors like Farrell, and instead gestures towards an expanded mode of authorship.

3.3 Internationalized and privatized architecture in post-socialist China

Roskam's chapter "The International Hotel" identifies hotel as an architectural typology concurrent with the rise of the Special Economic Zone and a "modernizing agenda" (p. 149) [7]. The hotel was the first spatial interface of foreign exchange and served to facilitate foreign direct investment. The demand for these spaces however initiated many scales and levels of reform. For example, joint ventures between the Chinese state and foreign companies were allowed to facilitate funding of projects, while foreigners/overseas Chinese could participate both through investments and expertise in architecture and finance. Famously, diasporic architect I. M. Pei made ideological departures in building the Fragrant Hill Hotel that risked upsetting reform ideologies. Like the questions posed by King, hotels in reform China constituted both the infrastructure of foreign interactivity and the making of it. Like Du's account of construction workers, Roskam notes a similar housing shortage for hotel housekeeping staff, which in addition to other imbalances in the coastal cities, sparked national protests in the late 1980s.

Next, Roskam cites authorship as the major contention between Western and Chinese ideologies. It is known that Western observers would come to admire "an alternative development model in action that neatly aligned with certain aspects of architectural work, including collaborative teamwork" under late Maoism (p. 61) [7]. Under the aftermath of the Cultural Revolution, architecture in China was moving cautiously from being a "collectively made art," and its architect did not rush to distinguish themselves from the "laborer and engineer within a work unit" (p. 63) [7]. In the chapter "Architectural Education and the Profession," Roskam shifts the authorship from design institutions to private and individual practices. He observes a lack of authorship to be symptomatic of an excessively rigid collectivity stemming from "state-run design organs" (p. 216) [7], and sees the liberation from them an improved condition for creative production. Roskam comments how post-reform Chinese practices perform differently than "starchitects" rampant in the neoliberal West. He focuses on the "amateurism" that lingers in the works of

Pritzker-Prize-winning Wang Shu, Liu Jiakun, and same-generation architects who come from backgrounds of historical revolution [7]. They generally hint towards more variegated forms of authorship that forge more connections with the commoner and their craft.

4. URBAN SOCIAL JUSTICE

This section consists of the analysis of how these three publications provided three different but comparable approaches of architectural type and authorship to argue for the exceptionalism of contemporary Chinese social justice issues. Urban social justice is defined as the points of contestations in urban development, where different stakeholder groups in the city compete for resources, and in the process of which their interests are being (de)prioritized over others. Besides, this section examines what is at stake in this exceptionalism, particularly how Western terms are insufficient to cover phenomena in Chinese spaces. It is argued that terming is a way of explicating social justice issues, out of which arise potential solutions. In other words, a Chinese urbanscape that could only be accessed with the right words for its issues. While Western theories such as the Lefebvrian idea of the "right to the city" [11] or Susan Feinstein's concept of "the just city" [12] can offer us general provocations, distinctive theories rooted in the Chinese context, and circumstances should be invented for more direct solutions. More about this exceptionalist discourse could be read from human geographer Wing-Shing Tang's *Tongbian* philosophy [13]. In an architectural context, it means to explore the conduits of typology and authorship.

A Western tyranny of architectural typology hindered our assessment of a milieu of social justice issues across different stratums of society. In the book, Chinese new town as a typology is decidedly vague and open to interpretation. Governa notes that the typological fluidity of the Chinese new towns overcomes "the predefined horizons of the city and its transformation" (p. 216) [2]. For example, residential and industrial uses are mixed, regardless of a region's definition in the urban, rural, or suburban. Du is also interested in unsettling architectural typologies. In criticizing purpose-built towers and "Technology Parks," she instead takes interest in urban villages as promising spaces of inspiration, where a mix-use program and informal land use foster diverse and vibrant human activity. Lastly, for Roskam, parallel to the rise of the international hotel is the simmering of societal imbalances and inequality. He insists that the segregationist tactics of foreigner-only hotel as emblematic of the asymmetric policies and contradictions of reform. Thus, one way of dismantling class divide is to deconstruct the givenness of these architectural typologies.

Furthermore, these authors demonstrate the many Chinese exceptionalist authorship models alternative to the Western, single-authored starchitect. As Bonino shows, the proliferation of architectural objects by Western brand names sustains a speculative economy that thrives on inequality. As Du urges, the ethnographic voices of migrant workers and indigenous urban villagers add friction and texture to a city narrative, hailing Deng as the visionary, or Farrell as the master builder. As Roskam traces, architectural authorship has always occupied a contentious position from the Cultural Revolution to early-reform foreign interactivity, to recent Chinese private practices. These authors simultaneously look to architectural history for insights to democratize/equalize a deeply stratified society that is China today.

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This is a single-authored work.

REFERENCES

[1] Harvey D. A brief history of neoliberalism. 2005, Oxford University Press, Oxford.

[2] Bonino M, Governa F, Repellino, et al. (eds). The city after Chinese new towns: spaces and imaginaries from contemporary urban China. 2019, Birkhauser, Basel.

[3] Brenner N, Schmid C. Towards a new epistemology of the urban? [J] City, 2015, 19(2-3): 151-182.

[4] Du J. The Shenzhen Experiment: The story of China's instant city. 2020, Harvard University Press, Cambridge.

[5] Easterling K. Enduring innocence: global architecture and its political masquerades. 2005, MIT Press, Cambridge.

[6] Easterling K. Extrastatecraft: the power of infrastructure space. 2014, Verso, New York:

[7] Roskam C. Designing reform: architecture in the People's Republic of China, 1970-1992. 2021, Yale University Press, New Haven.

[8] King AD (ed). Buildings and society: essays on the social development of the built environment. 1984, Routledge, London.

[9] Carpo M. The alphabet and the algorithm. 2011, Cambridge, MIT Press.

[10] Vidler A. The third typology and other essays. 2015, ActarBirkhäuser. Basel.

[11] Lefebvre H. Writings on Cities. 1996, Wiley, Hoboken.

[12] Fainstein SS. The just city. 2011, Cornell University Press, Ithaca.

[13] Tang WS, Benjamin S. Land as situated spatio-histories: A dialogue with global urbanism. In Global urbanism: knowledge, power and the city. 2021, Routledge, Milton Park and New York.

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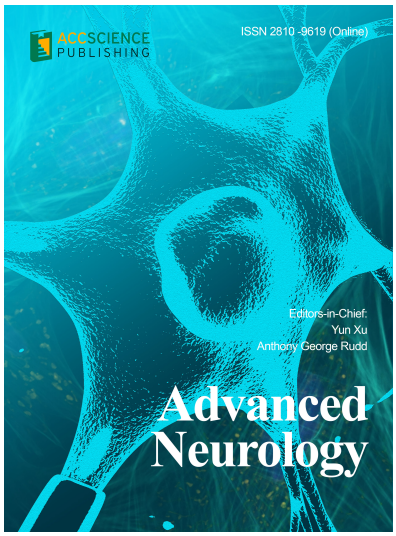

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