The origins of the formation and features of the manifestation of the Chinese Europeanized Architecture in mid-19th–second half of the 20th century

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Abstract. This article will look at the main preexisting architectural influences lying behind the development of Sino-Western architecture, fine examples of which exist in the southern (diaolou and qilou), central (shikumen) and Manchurian provinces (Chinese baroque). The first group consists of European architecture, as seen in the construction of European settlements and possessions in China, as well as the European-influenced buildings of Southeast Asia. The second group is the traditional architecture of China itself, which is a variation of the main type of Chinese residential buildings-siheyuan. The manifestation of the European influence in urban planning, space-planning decisions and decorative design of facades will be analyzed. It will be pointed out that the smallest changes affected city-planning decisions, which practically did not change. Functional and planning schemes of traditional Chinese buildings continued to dominate in the space-planning structure until the late stages of development. In the decorative design, from the first stages of development, an active borrowing of foreign elements can be traced, while their transformation occurred due to attempts to adapt them to traditional architectural forms and the local builders’ ignorance of the canons of European architecture.

1. Introduction

China had been going through several thousand years of development during which time the architectural and urban planning principles developed without western influences. That led to the foundation of this unique architecture in China which in its turn influenced the development of architecture in other countries in the East as well as parts of South East Asia.

Study of the architecture of this region started relatively late due to scientific progress in China being delayed by continued Imperial power in China, which only began to fade after the Opium wars. Settlers from Europe, most of whom were merchants and industrialists, did not appreciate the uniqueness and originality of Chinese architecture. As early as the beginning of the 20th century many Western architectural historians mistakenly believed that Chinese architectural development was largely based on employing the principles of Indian architecture [1]. Permanent military conflicts in the first half of 20th century and the closure of borders after the coming to power of the Chinese Communist Party in 1949 made it impossible to complete the study of China’s architectural heritage.

The first works on the history of architecture in China were written by Liang Sicheng. After studying at Tsinghua University, Beijing (1915–1923), he also graduated from the University of Pennsylvania (1924–1927), he studied Western writings on the history of Chinese architecture. After returning home in 1928, he began the study of ancient treatises, as well as engaging in full-scale study
of architecture in China. The result of his work was “The Pictorial History of Chinese Architecture”, first written in 1946 in English but not actually published until 1980 [2].

Thanks to his work, by the end of 1980s the study of the history of architecture had begun in China, as well as foreign researchers now being given the opportunity to visit China in order to conduct their own research. From this time on, attention has switched to the study of ancient and medieval China, mainly temple and palace complexes and town planning principles [3-4]. There have also been studies conducted by European, American and Russian scientists that explore the colonial architecture of the Tianxia [5-8].

The study of traditional Sino-Western transitional forms is in its initial stages at the moment. It should be noted that work in this field has been gaining in popularity since the beginning of the 21st century. Chinese Baroque architecture is studied in Russia as a part of the research into Russian Manchuria architecture [9–10], as well as at the Harbin Institute of Technology in China [11-12]. The latter is conducting targeted research into the merging of the two cultures in the settlements of the right of way of The Chinese Eastern Railway (CER).

The study of the phenomenon of Shanghai shikumen started earlier than that of other Sino-Western styles. Both the Eastern and Western schools have been actively engaged in studying this particular style [13-14]. In a number of works the term shikumen has been commonly used to depict all China’s eclectic styles. The study of qilou is conducted in the same manner. This is largely due to the fact that this type of buildings is often considered in conjunction with shophouses, also known as arcades in Southeastern Asia [15].

Study of architecture Kaiping diaolou should be dealt with separately [16-17]. Interest in this style first appeared at the start of 21st century and it is still in an early stage of its development. Most of the information was collected by Chinese researchers when they examined registration documents for watchtowers and villages in the Kaiping diaolou region whilst applying to be UNESCO World Heritage Sites in 2007. Today, these buildings are often written about more as tourists attractions than places of special architectural interest. Coverage of this problem in Western literature is minimal and largely based on UNESCO documents. A present work is also being undertaken to describe and classify other architectural styles in China.

2. Early examples of Sino-Western architecture

Western and traditional architectural styles both played a key role in the formation of different eclectic approaches in architecture in China. Over the centuries Chinese architects have attempted to maintain traditional essence of Chinese architecture, whilst at the same time incorporating western influences into their designs. Looking at the early examples of European architecture it should be pointed out that we are dealing with two distinct movements.

The first one includes examples of colonial architecture, located in China. For the most part all of these styles are free interpretation of the architecture of western concessions. In this case, the stylistic features mostly depended on the metropolis’s architectural school, which is rarely seen in its pure form in former western colonies.

Terraced houses of the British concession served as a prototype for Shanghai shikumen, which were banned in the 1860s due to the threat of fire. [18]. The Russian modern style became the basis for Chinese Baroque, typified by buildings designed by Russian engineers and architects for the CER, as well as residences and apartment houses of industrialists and merchants [19].

The second movement is copying which took place without direct contact with the prototype architecture. It is true for the development of Kaiping diaolou and probably Meizhou weilou as well. As it has already been mentioned above, migrant workers from southern China began to copy Western architecture that they had seen in the United States and Australia. The majority of buildings were built by local architects. There are examples of using the projects of Western architects that were interpreted by local bricklayers with significant changes. In addition, photographic postcards of architectural structures from all over the world have been found in many Kaiping diaolou. Probably,
they were also used as a prototype to create palatial towers. This fact may explain the use of Eastern motifs in some buildings [20].

Apart from direct borrowing of Western architecture, there were examples of its transfer to China in the form that had been processed by other Asian countries. First of all such an example is qilou. Their prototype is still unknown, but the varieties of this type of buildings are spread throughout Southeastern Asia. Most probably, they were born in British India and from Indochina spread first to the South China Sea, and then along the south-eastern coast of China [21]. A similar process took place in Harbin during the Japanese occupation, where the process of building westernized Japanese architecture began.

Even where western elements are widely employed, Chinese architecture has always been traditionally Chinese in nature. Manifestation of this is mostly visible in the eclectic architecture of Guangdong Province. Division of architecture into trade architecture (qilou) and the fortress one (Kaiping diaolou and weilou) gives us an idea of the two directions of development of the traditional architecture of the region [21-22].

As noted above, arcades came to Guangdong from Indochina, but in the 17th century architecture of Cantonese merchants had already been formed, the so-called bamboo stretched houses. According to the organization of space and proportions, as well as the structure in the urban areas, they were identical to shop houses in Southeast Asia, which facilitated the integration of qilou in urban development.

Fortress architecture was typical of the Hakka people, living in Lingnan region. It is on the basis of communal houses—square tulou, common in Fujian—developed Kaiping diaolou as well as weilou in Sino-Western style. The first ones underwent multi-stage transformation, which can be seen in the composition of the oldest preserved buildings of this type—Yinglong Lou. It is a building flanked on four sides of the tower, which is a distinctive feature of the variation Tulou in Jiangxi Province—sijiaolou. This composition is often repeated which suggests that these buildings were the prototype of all Kaiping diaolou in Guangdong. Weilou in Sino-western style is an evolution of traditional weilou, also known as weiwu, which is a kind of tulou in the northern part of Guangdong province.

Looking at the architecture of Shanghai and Harbin urban structure one can notice urban planning structure, which shows the influence of traditional hutong. Despite cramped buildings, traditional Chinese courtyards were preserved, often with very nominal proportions. In Harbin, the yards remained close to the square configuration, which led to the formation of balconies, galleries and terraces along the perimeter [23].

3. Application of Western and traditional techniques
The study of foreign influence on the architecture can be divided into three levels: urban development, space-planning and decorative. The appearance and decor of buildings have been undergoing major transformations, whereas design and planning decisions have been influenced by this trend to a lesser extent. Changes at the level of urban development occur slowly and are evolutionary in character [24].

With regard to the largest sphere, urban planning—it should be noted that significant changes took place only in the city of Harbin in a hundred years of active integration of Western culture. At the same time the initial development was chaotic and looked like the type of residential buildings—hutongs and only street breakdown by Russian engineers brought planning principles up to European standards. Half a century before traditional buildings had been transformed due to the influence of the cramped conditions in Shanghai, but had preserved the basic principles of traditional urban planning.

Even more, this trend was expressed in the southern provinces. House qi Lou organically entered the existing trading houses of Cantonese merchants and didn’t bring significant changes into the urban structure. In countryside Kaiping diaolou were located outwards, however, they followed the canons of Feng Shui.

With regard to the space-planning and constructive decisions they should be divided into two periods. During the initial period of the first European borrowed techniques planning scheme was based on a traditional composition, typical for the region. In many houses, there was place for the
altar. The structural system practically didn’t change, in most cases it was the wooden frame with the filling.

During the second stage gradual changes began to occur which coincided with the formation of the Republic. Typically European differentiation of premises according to their purposes and floors appeared. Structural scheme began to change, thanks to the emergence of concrete products and metal frame. In particular this method was applied to medium and high-rise buildings that were actively used in the construction of the palace towers.

Changes in the facades of buildings were the most powerful and visible. In fact, there was a complete replacement of traditional Western elements. The order system and its arcade were actively used. The Doric and Composite order were often used as well. At the same time, there wasn’t entails and flutes. Different variations of volutes and pediment endings of different forms were used in the design. The first level was often decorated with rustication. Balustrades were actively used. Top of building were constructed in the form of terraces, domes, hipped roof.

Together with European techniques, such as geometric compositions, stylized floral ornament was also actively used. At the same time there was a traditional scheme of animalistic images, and landscape scenes. Many buildings had their own name in the form of hieroglyphic stucco. Traditional vertical orientation of the inscriptions was used in the early buildings, which was replaced by a horizontal one in the southern regions in the beginning of the 20th century. In most buildings hand molding was located on the upper tiers, often over-loading them, it was commonly used in the design of door and window openings as well.

4. Conclusion

Sino-Western architecture is based on a synthesis of traditional and borrowed elements of European architecture. At the same time, the space-planning structure of Europeanized buildings follows the principles of traditional Chinese buildings, and the prevailing territorial-planning structure of settlements has predetermined the location of such objects.

In addition, Western architecture is exemplified both directly by European architecture, located in zones of foreign settlements, and concessions in China, and by variations on the original form, which can be seen in the Europeanized buildings of Japan and Southeast Asia. Such objects primarily influenced the decoration of the facades in Sino-Western architecture, which was often interpreted from the perspective of local semantics. Building materials and constructions were also borrowed, however, functional zoning and planning decisions began to be adopted only in the later stages of its development.

References
[1] Fergusson J 1910 History of Indian and Eastern Architecture vol 2 (London: John Murray)
[2] Liang S 1984 A Pictorial History of Chinese Architecture: A Study of the Development of Its Structural System and the Evolution of Its Types ed W Fairbank (Cambridge, Mass, London: MIT Press)
[3] Luchkova V I 2011 The History of the Chinese City. Urban Planning, Architecture, Landscape Gardening Art (Khabarovsk: Pacific Nationa Univercity Publisher)
[4] Shevchenko M Iu 2019 History of Architecture and Urban Planning of China (Moscow: Architecture-S)
[5] Farris J A 2016 Enclave to Urbanity. Canton, Foreigners, and Architecture from the Late Eighteenth to the Early Twentieth Centuries (Hong Kong: Hong Kong University Press)
[6] Zatsepine V 2013 Russia, railways and urban development in Manchuria, 1896–1930 Harbin to Hanoi. The Colonial Built Environment in Asia 1840 to 1940 ed. L Victoir and V Zatsepine (Hong Kong: Hong Kong University Press) pp 17–36
[7] Kradin N P 2010 Harbin—Russian Atlantis (Khabarovsk: Khabarovskaya kraevaya tipografiya)
[8] Smolianinova T A and Bazilevich M E 2020 Architecture of consular buildings in Manchuria (Lubin) during the first half of the 20th century *IOP Conf. Ser.: Mater. Sci. Eng.* **753** 022084. DOI:10.1088/1757-899X/753/2/022084

[9] Ivanova A P and Kradin N P 2014 About Studying Architectural Heritage of the Harbin City: “Chinese Baroque” *Bulletin of PNU* **4(35)** 31–40

[10] Levoshko S and Kirichkov I 2016 Tourist quarter “Chinese-Baroque” of Dao Way district in Harbin city: experience, problems and perspectives of renovation *MATEC Web Conf.* **73** 06003. DOI:10.1051/matecconf/20167306003

[11] Cao C, Zhang Y, Xu S and Zhang D 2012 The exploratory research of Harbin Chinese baroque traditional block’s protection and update *New Ideas of New Centuries—2012* vol 1 ed V I Luchkova et al (Khabarovsk: Pacific Nationa Univercity Publisher) pp 356–360

[12] Li Q and Liu D 2013 Research on the spatial form of the traditional courtyards in Harbin Daowai historic district *New Ideas of New Centuries—2013* vol 1 ed V I Luchkova et al (Khabarovsk: Pacific Nationa Univercity Publisher) pp 356–360

[13] Arkaraprasertkul N 2009 Towards modern urban housing: redefining Shanghai’s Lilong *Journal of Urbanism* **2**(1) 11–29. DOI:10.1080/17549170902833816

[14] Guan Q 1996 *Lilong Housing, a Traditional Settlement Form* (Montreal: McGill University)

[15] Wang H and Jia B 2015 A morphological study of traditional shophouse in China and Southeast Asia *Procedia—Social and Behavioral Sciences* **179** 237–249. DOI:10.1016/j.sbspro.2015.02.427

[16] Batto P R S 2006 The Diaolou of Kaiping (1842–1937). Building for dangerous times *China Perspectives* **66** 2–17. DOI:10.4000/chinaperspectives.1033

[17] Kim A A and Luchkova V I 2017 Diaolou in Guangdong province (China) as a reflection of western european influence in the architecture of the region *Bulletin of PNU* **1(44)** 55–64

[18] Wang F 2016 *Geo-Architecture and Landscape in China’s Geographic and Historic Context* vol 4 (Singapore: Springer)

[19] The Board of the Chinese Eastern railway 1923 *Historical Overview of China Eastern Railway. 1896–1923* ed E Kh Nilus (Harbin: The printing houses of the Chinese Eastern Railway, Ozo Partnership)

[20] Tan J H 2007 *Kaping Diaolou and Its Associated Villages. Documenting the Process of Application* (Hong Kong: Hong Kong University)

[21] Yang H, Hu W and Pan G 2012 *Xiguan Dawu and Qilou* (Guangzhou: Jinan University Press)

[22] Lu Q and Chen J 2017 *Guangdong Weiju* (Beijing: China Building Materials Industry Press)

[23] Ivanova A P 2014 *Foreign Influence in Architecture in China and Indochina. 1860–1960* (Khabarovsk: Pacific Nationa Univercity Publisher)

[24] Kim A A and Tceluiko D S 2018 The border of cultures as a zone of formation of eclectic architecture *IOP Conf. Ser.: Mater. Sci. Eng.* **463** 022093. DOI:10.1088/1757-899X/463/2/022093