

Research on Modern Architecture of American firms in Canton

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Abstract. American Foreign Firms play a second important role in China's modern Foreign economy. It's architectural heritage culture occupies an important part of Canton's business culture. Against the backdrop of the great importance of culture in building Guangdong-Hong Kong-Macao Greater Bay Area, this paper analyses how the architecture of American firms evolve in layout, style, material and structure, aiming to discuss the culture value of architecture of American firms and provide advice for value assessment and protection of commercial and trade architectures in GBA.

1. Introduction

Urban culture is the soul and life of the city. Guangzhou (in Mandarin Canton) city integrates Chinese and Western civilizations and inherits ancient and modern cultures. It is the center of the blending and development of Chinese and Western cultures. In modern times, Canton was a turning point in the inheritance of industrial civilization. The excavation and analysis of culture is the foundation for Canton to realize the new vitality of the old city.

Canton is positioned to be an international business city center according to the strategy of building a national central city. The regional business culture with complete system and rich layers will lead the urban culture construction of Guangdong-Hong Kong-Macao Greater Bay Area. Modern commercial and trade buildings in Canton, such as Messrs Sassoon Sons & Co, Andersen, Meyer & Company, and Dodwell & co. ltd, are of typical architecture, and also the building blocks of the modern commercial and trade architectural cultural heritage of Lingnan Area, are also integrated into the world economic system and trade in modern China from the regional economic system. These also act as carrier of urban culture and modern culture in the development of the industry, showing how modern china went global. In the context of the construction of Guangdong, Hong Kong, Macao Greater Bay Area. This paper intends to explore the characteristics and evolution of modern American architecture in Canton city. It will also assess the overall value of the commercial and architectural culture of Greater Bay Area, and protection, which provide a reference for commercial and trade architectures.

2. Modern American Firms History

In 1686 (the twenty-fifth year of Qing Emperor Kangxi), Foreign Firms were established in Canton city. In 1699, the Factors of The East India Company rented a commercial hall for trading in Canton city. In 1719, France rented a commercial hall in Canton. The United States has also rented a commercial hall in the Thirteen Factories (in Mandarin, Shisan Hang or the Canton Factories) since 1784.

The building of Thirteen Factories were built by Canton's comprador [1], the commercial hall are rented by foreign businessmen. Every commercial hall is a management of trade goods between countries and China. Each commercial hall is a place for a foreign trade agent in China. Each of them was named after the name of country that operates the import and export of goods between the particular country and China.

American merchants traded with China via the ship's supercargo started in 1783. As trade boomed, some business representatives set up agencies in Canton. In 1786, the first US consul in Canton, Samuel Shaw, established the first American-owned American business in China, Shaw & Randall Co. [2].

In 1815, the business representative was completely replaced by an agent. As the United States was undergoing an economic depression in 1818, domestic commodity circulation almost halted. Since the 1920s, the form of foreign trade in Canton has gradually changed from cash to credit transactions, as opposed to the draft which was used between the US agency and Canton traders. In 1844, China and the United States signed the “US-China Five-Port Commerce Charter” and American businessmen in China received strong support from the US government. During the golden time for the early US-China trade, the 19th century witnessed American imports of tea, porcelain, and silk from China, and exported ginseng, mink fur, and smuggled opium to China. Agency business was the main mode of operation of Western firms in China until the advent of telegraph communication in the 1860s.

Table 1 the Canton Modern American Firm (Company) List

No.	Name of Firm	Established	Business Scope	Remarks
1	J. & T. H. Perkins	1803	Agency business concurrently commissioned agency trade	N/A
2	Russell & Co.	1818	N/A	Samuel <u>Rassel</u> and Philip <u>Ammidon (Brounglives)</u>
3	<u>Samuel Rus-selland Co. (Qichang Firm)</u>	1824	N/A	Opened on January 1, 1824
4	<u>Dyphant & Co.</u>	1825	N/A	Do not participate in opium trading
5	Augustine Heard & Co.	before 1840	Smuggling of opium and trafficking in human beings	N/A
6	<u>Macvicar & Co.</u>	before 1844	N/A	N/A
7	<u>D.Sassoon Sons & Co.</u>	before 1845	N/A	N/A
8	<u>Danes' Island Dock Compang</u>	1846	Repair ship	James Rows was built in Huangpu Canton
9	Thos Hunt & Co.	1850	Repair ship	Sold to Hong Kong Huangpu Dock Company in 1865
10	Look Sun Dock	1863	Repair the dock	Joint venture between <u>Couper Doch</u> and Thos Hunt & Co.
11	Standard Oil Co. of New York	1894	Import various petroleum products	No. 6, 4th <u>Shameen Street</u>
12	Texas Oil Co.	1915	Import and sale of various petroleum products and refining of oil	No. 5, 3rd <u>Shameen Street</u>
13	Asia Banking Corporation	Before 1920	General banking	N/A
14	Citibank N.A.	Early 20th Century	Deposit remittance, international exchange	N/A
15	<u>Anderzen Mysner & Co.</u>	1905	Operating electric power parts, refrigerators, ice machines, etc.	N/A

In the second half of the 19th century, some firms even established fleets and insurance firms, operated financial transactions, and expanded their opium trade in China.

Along with the impact of three big fires in the Thirteen Factories Area of Canton (1822, 1840, 1856), graduate forming of business and economic atmosphere in Shameen Island (1861), the American firms were transferred from the Thirteen Factories Area to Shameen Island Area. Shameen Island's business and trade is prosperous, drives business activities in the North Shore and the Flower fields of the south bank of the Pearl River.

The Opium war at the beginning of the 20th century was a period when American firms were building in great scale, which were mainly concentrated on the commercial district of Canton and the Shameen Island (Table 1, [3]).The existing modern American-style buildings in Shameen Island, include: Russell & Co, located in No. 48; Andersen, Meyer & Company, in No. 8 Shameen 4th Street, and Texas company and Canton Mobil Oil Company, located in No. 61,Shameen North Street.

3. Modern American architectures in Canton

As there are many modern American architectures in Shameen Island in Canton, this article takes three existing American Firm buildings as examples.

3.1 Russell & Co.

Russell & Co. (1818-1891) is the first firms in American economic aggression towards modern China, and was also the largest agency of American capital in China in the 19th century. It has close ties with Boston Business Group and Washington politicians.

Its predecessor was the Russell & Co. founded in Canton in 1818 by Samuel Wadsworth Russell (1789-1862), commonly known as "Old Russell". In 1824, he changed his name to "Samuel Rus-selland Co." (Chinese name is "Qichang Firm"), engaged in cross-border trade between Canton and Boston. In 1842 (the twenty-fifth year of Daoguang), Russell & Co. owned two commercial offices in Canton and Macau respectively. It established a business agent in Hong Kong in 1843.It moved to No. 9 Shanghai Bund as its headquarter in 1846.From 1862 to 1877, the shipping business from Shanghai to the Yangtze River was dominated by Russell. This period is known as the "Russell Era". At this time, Russell & Co. can be compared with the British Jardine Matheson Co. In the middle of the 19th century, merchants from Russell won position, including consular posts of the US main trading ports in China, and they almost handled all foreign affairs in China. These merchants had a dominant position in the US trade with China.



Fig.1 The old Factory site, Canton



Fig. 2 the Russell & Co. Building

The building (Fig. 1) was located at the new site of the southern end of the Greek way and the intersection of XiHao-Chong in the Thirteen Factories Area of Canton.

This place was originally rented to the British East India Company, which has a close relationship with Howqua and Creek Factory.After the Thirteen Factories building was burned down in the second Opium War, Americans built the Russell & Co. Building on the site of the this area [4] .

As the "Map of the City and Entire Suburbs of Canton in 1860", which was painted by the German Rev. D. Vrooman in 1860, who only marked that place "old factories", didn't indicate the building's name. We may speculate that the Russell & Co. building was built after 1860.So the prediction is that this is a typical Neo-Renaissance colonial porch in Victorian-era that suits the

climate of South Asian colonies. This building has the following characteristics: the large building area, the center location of the building, and the continuous semi-circular coupon corridor with 12 openings of main facade of the square building, with seven openings in side facade; two-story building; high and low chimneys dotted housetop; the courtyard around the house, and the private dock along the river; warehouse behind the house.

The existing Russell & Co. Building was built at the end of the 19th century, which is Located at No. 48, Shameen Street (Fig.2). The building is facing south, the height of the main building is 9.95 meters and the construction covers an area of 835 square meters. The main building is in two-story Asian colonial style, the façade of the building is composed of nine consecutive square brick pillars, which form a veneer-style verandah. The log shutters and windows on the exterior doors and windows, and the interiors' beautifully decorated fireplace are still retain.

3.2 Andersen, Meyer & Company, Limited



Fig. 3 Andersen, Meyer & Company 1948, Aug.8th

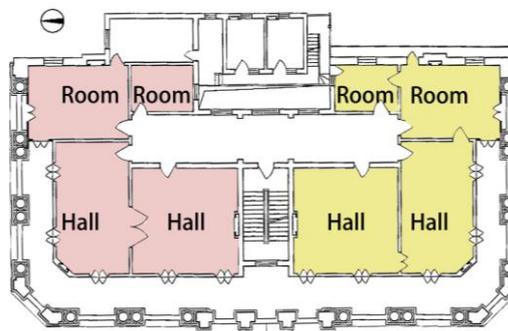


Fig.4 Second floor plan

In March 1906, Vilhelm Meyer and Anderson and others founded Andersen, Meyer & Company, Limited (1906-1949). In 1915, this firm became the agent of General Electric Company (GE) under the Morgan Financial Group in China. It's business scope was extended to machinery, bridges, power and building materials, and it represented 171 European and American manufacturers. They have opened 9 branches around Chinese city, such as Shanghai, Hong Kong and Guangzhou etc. From 1931 to 1938, this firm contracted and built many important projects in Canton and Shanghai. It was acquired by General Electric in 1934 (Fig.3).

The site of this firm is located at No. 8 Shameen 4th Street, at the southwest corner of the intersection with Shameen Street. The building sits east to west and covers an area of 714 square meters. There is a garden behind the building. The layout of the main and auxiliary buildings: the main building is three stories high, the annex building is five stories high, and the main and auxiliary buildings are connected by the atrium (Fig.4).

This building is neoclassical. The west facade of the building is expanded on both sides of the middle axis. The typical vertical three-section and horizontal five-section: the main entrance is located in the center of the west and at the bottom of the two corners, with two leaning columns and semi-arc gables; The bottom floor has large arch windows; the Palladio-style thick and powerful double pillars run through the second and third floors; the second-floor outer gallery has a bottle-shaped railing, and the third floor is an arc-linear balcony. A patio is provided in the middle of the building for both lighting and ventilation. The façade style of the building is similar to the old site of Standard Chartered Bank not far from each other. The interior wooden balustrades feature Baroque torsion columns, a style that is unique in buildings of the Shameen Island.

3.3 The Texaco oil Co.

Texaco oil Co. was founded in 1901 in Houston, Texas, USA. It was part of the Rockefeller consortium. It was one of the four largest oil companies in the United States too. In 1904, Texaco oil Co. set up a branch office in Shanghai. It then began to expand in central cities such as Shanghai and Canton. It gradually shared the Chinese oil market with Standard Oil Co. of New York, and the Asiatic Petroleum Company continued until the liberation. The regional company set up by Texaco

in Shameen has jurisdiction over Kwangchowan, Swatow, Kongmoon, Haikou and Wuchow. The site of Texaco Oil Depot was built in 1924, it was the earliest warehouse built by Texaco in Canton.



Fig.5 The Texaco oil Co.

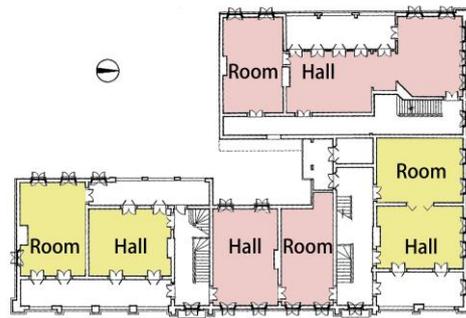


Fig.6 the First floor plan of the Texaco oil Co. building

The Texaco oil Co. building in Canton was built in 1905 (Fig.5). It was located at No. 61 North Street, Shameen Island. It is a three-story brick-concrete structure house at the southwest corner of the intersection of Shameen North Street and Shameen No.3 street. The ground floor of the building is functioning as an office. The second and third floors are residential accommodation. The building's flat shows free-form layout (Fig. 6) with clear functional partitions. Building's traffic corridors distinguish and contact three units of use, each unit containing a public space and a private space.

4. Characteristics

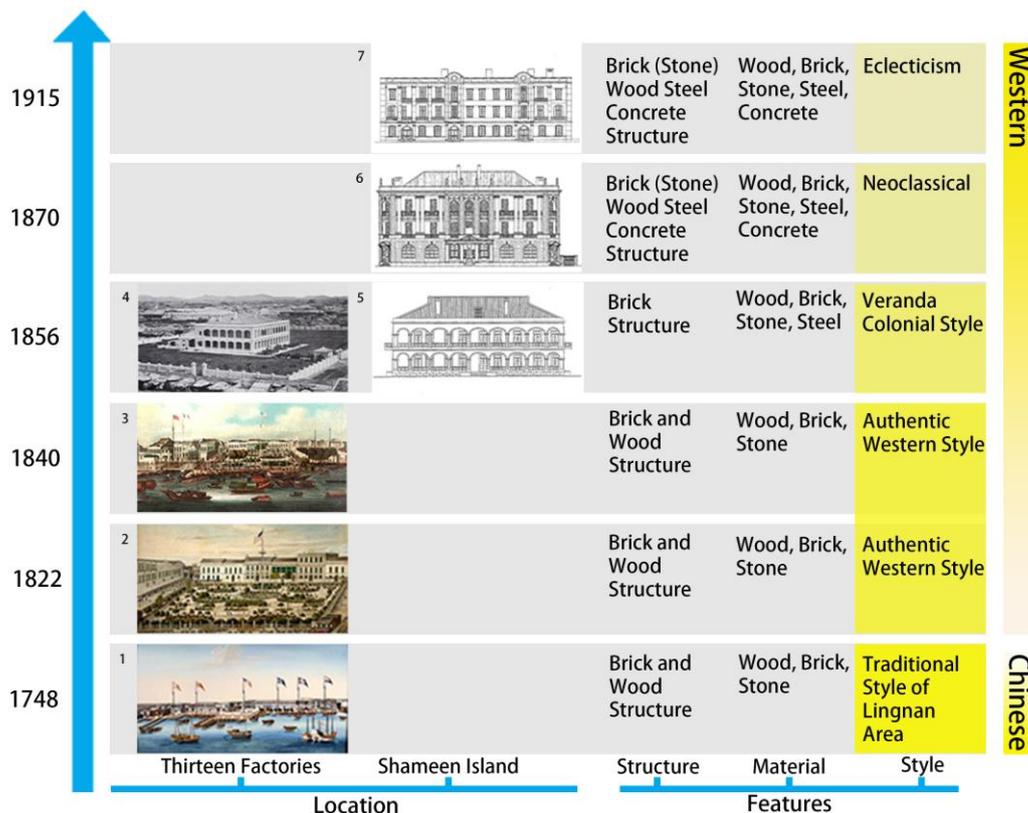


Fig. 7 Modern Canton American firm Buildings Development Evolution List

According to listings, the information of three buildings above, the changes in architectural style can be roughly divided into five stages: the first stage: the traditional Lingnan period of the Thirteenth Factories line of the Qing Dynasty from 1748 to 1822; the second stage: the colony of the Thirteenth Factories line of the Qing Dynasty; the third stage: the late Thirteen Factories line of the colonial vestibule; the fourth stage: the neoclassical period of the early Republic of China; and the last stage is the eclectic period of the late Republic of China (Fig. 7).

5. The Evolution of Modern American Firm Architecture in Canton

In the mid-18th century, the colonial style appeared in New England along with the development of the American economy. In the early 19th century, along with the formation of the bourgeoisie and the victory of the North American War of Independence, Greek revival architecture was born in American architecture. Architect Thomas Jefferson (1743-1826) integrated the Greek republican architecture that represents the spirit of freedom and independence into the colonial architecture of the United States, creating an architectural style different from the United Kingdom. It featured antique Roman porch style, which are thin crotch, no grooves in the column, wide open, simple legs, etc., reflecting a more free and frank style. In the second half of the 19th century, the capitalist system in Europe and North America created the industrial revolution. They established the world market, and the capitalist economic development broke through the national boundaries.

The world had created an eclectic style in which all the architectural styles in history can be used alone or in combination, but the plan of buildings are still about axis, symmetry and spatial sequence, and less practical considerations such as function and economy.

At the beginning of western powers entered China, the British authorities who represented the authorities could play an effective organizational role in renting land.

In the United States, merchants are concurrently consuls. Merchants are the real building subjects and users of renting land. Therefore, the construction of American firms reflects the will of merchants. During that period, American merchants in China have a high status in the US government, which once influenced the US policy toward China, trade, and diplomacy. Therefore, the architectural style of American firms is different from that of the British Georgian architecture.

5.1. The Geographical evolution of the building

During the Maritime era, for the needs of loading and unloading goods, buildings in the Thirteen Factories period were built along the coast, or there were independent revetments leading to the shore, such as the “tips” of the Thirteen Factories period. After December 1856, each factory was set up with a unified revetment. The space released by each factory is concentrated to form a park to provide public space for people and community.

Russell & Co. is the most influential American foreign Firm in China in the 19th century. The architectural changes of Russell & Co. building are representatively. Russell & Co. rented the Thirteen Factories building from the early stage, to the west side of Xihaokou after 1860 (Fig. 1), to the No. 48 Shameen Street (Fig. 2) building.

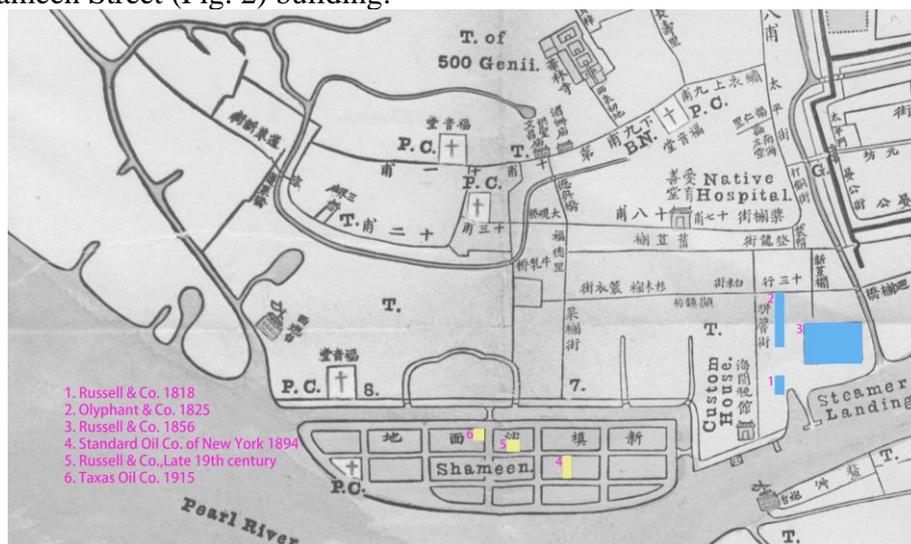


Fig. 8 The map of the geographical position of the American firm

With the southward expansion of the Pearl River, buildings gradually approaches the river. Learn from the change line of the Thirteenth Factories river bank of Professor Zeng Zhaoxuan's ‘Guangzhou Natural Geography’ [5], combined with the position of Russell & Co. house on the provincial city map in 1880, combined with the position of each foreign firm in Shameen Island, the

map of the geographical position of the American firm was drawn (Fig.8).It can be seen that, although the building is no longer close to the revetment,it is still closely related to the water side. The relationship between the building and the terminal reflects the changes in the political system and trade patterns.

5.2 The Evolution of the layout



Fig.9 The old Factory site, Canton

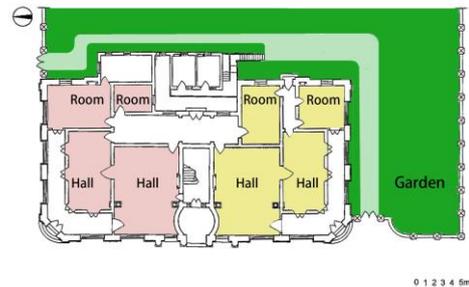


Fig.10 the First floor plan, Shameen

The early colonial buildings were located in the middle of the site (Fig. 9), surrounded by gardens, or known as green spaces. The ratio of garden to building land is larger than 1. The land plan for the mid-term concession is Mesh City Planning, buildings are often arranged along the street, building surrounded by garden. And the building is designed to maximize the orientation of the block (Fig.10). The ratio of garden to building land is less than 1. In the later stage of the development of the concession, due to soaring land prices and tight land use, new buildings often have the largest base area in the site as the construction target (Fig.3). The relationship between architecture and gardens (green spaces) reflect the relationship between people and the environment in buildings.

5.3 The Function Evolution of building

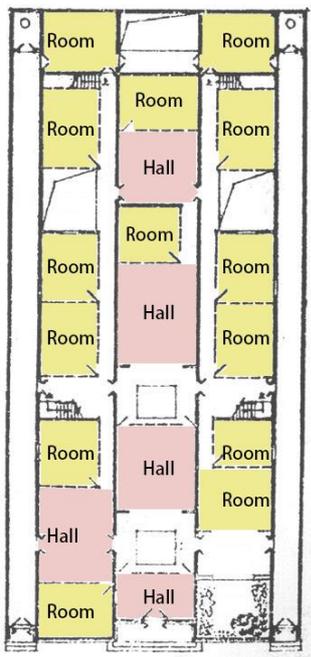


Fig.11 Plan of the Ganton traditional residential flat

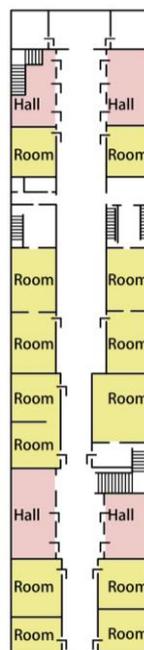


Fig.12 Plan of the Spanish Factory in 1789

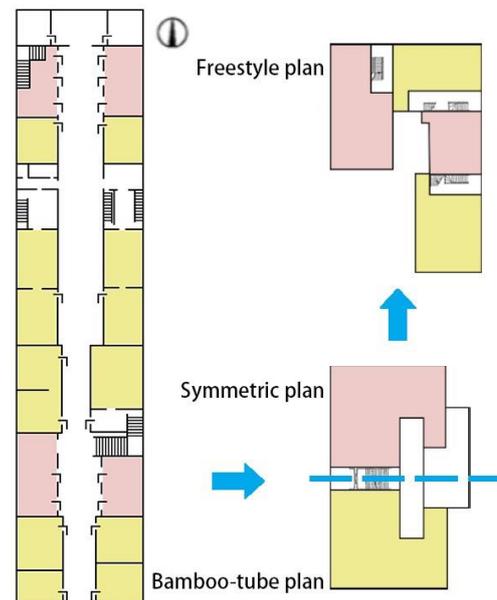


Fig.13 The Development Diagram of Firms' Architectural plan

The American firms rented a commercial hall in the early days. The hall includes facilities of office, residence, loading and unloading, etc..The building had a bamboo-tube vertical layout (Fig.12) plan like the Canton traditional houses (Fig.11). Along with the changes and expansion of the business content of the foreign firms. For example, early management of tea, opium and silk require a large amount of open space for storage and handling activities. Therefore the building is surrounded by a gallery to open the surrounding open space (Fig. 9) in the site.

With industrial development and changes in the second generation of foreign industries, combined with changes in land planning methods, warehouses and offices were established separately, and specialized warehouses were established in the other place, Henan. By the early 19th century, the modern American architecture was influenced by the design concepts of Ludwig Mies Van der Rohe's "less is more" and Frank Lloyd Wright's "idyllic city", the architectural plane is symmetrical and Freestyle (Fig.6).

5.4 The Style Evolution of architectures

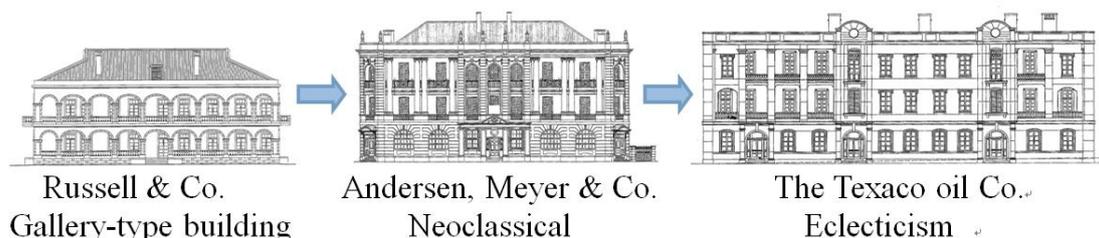


Fig.14 The Development Diagram of Firms' Architectural Style

According to the Qing government regulations, foreign merchants were not allowed to build their own houses in Canton. They could only rent houses which designed by Canton's comprador on the Thirteen Factories Area. Foreign merchants were not allowed to renovate the leased real estate. Hence, there was a strict time management for their legal stay in Canton. After three huge fires which happened in 1748, 1822, and 1842, the buildings of Thirteen Factories were rebuilt several times.

The Western merchants had continued to fight for the Land-use Right and Right to Land Construction with wars and treaties. The construction of building styles in the Thirteen Factories has been built in the style of Western (fig.14). In December 1856, the outbreak of the fire completely destroyed the Thirteen Factories [6].

A few years later, the foreign firms buildings has been converted into streets. In 1861, English and French rented Shameen Island and were granted the right to rent and build houses at the trading ports.

5.5 The technique Evolution of the building

European and American capitalist countries had the period of profound changes in the culture, society, and economy during 1861 to 1941 (the outbreak of the Pacific War). New building materials such as Portland cement, British steel, corresponding reinforced concrete and steel structure technologies have been tested and applied to construction projects in railways and bridges. These new materials and technologies were also used in the construction of Firm buildings in Shameen Island.

Table 2 the Structure of Modern American Firm Building Evolution Table in Canton

Period	After 1748	After 1860	1870	1905	1915
Building	American Factory	Russell & Co.	Russell & Co.	Anderson, Meyers & Co. Ltd.	The Texaco oil Co.
structure	Brick, wood, stone	Brick, wood, stone	I-beam, brick, wood, stone	I-beam, wood, brick, reinforced concrete	
material	Brick and wood structure	Brick-concrete structure	Mixed structure	Brick (stone) wood steel mixed structure	

Both Russell & Co. and Texaco Co. buildings used a brick (stone) wood-steel hybrid structure, which was made by using I-beams on the load-bearing wall to form I-beam rib beams and the upper decking (Table 2). It embodies the application of new technologies and new materials.

6. Conclusion

The modern American Firms architecture in Canton is built by foreigners and has strong colonialism and heterogeneity. We explore the evolution of such buildings and understand that the changes in architecture are highly correlated with the commerce, social systems, and regional climate. Sexuality, in the process of symbiosis with traditional Chinese Lingnan architecture, formed the “common heritage of mankind”, which is an important part of Canton's commercial and trade architecture's culture. The article attempts to convey the characteristics of excellent architectures and find eternal quality by the long-term and scientific history view, and provide reference for value judgment in the protection of architectural cultural heritage.

Acknowledgements

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Image index

- Fig.1 John Thomson, Illustrations of China and Its People [M].*London: Sampson Low*, 1873.P114.
Fig.3: Aerial view of Guangzhou city in 1748, the Views of Canton picture, collected by Drottningholm China Pavilion in Stockholm.
Fig.5: <https://cv.vic.gov.au/stories/built-environment/the-architecture-of-arthur-purnell/> Series: Arthur William Purnell 1875-1964 collection, State library of Victore.
Fig.8: Original image from: Kerr John Glasgow, The Canton guide[M]. *Hong Kong: Kelly and Walsh*, 1889. P41.
Fig.9: John Thomson, Illustrations of China and Its People [M]. *London: Sampson Low*, 1873.P113.
Fig.11: Yang Honglie, Xiguan House and the arcade[M]. *Guangzhou: Jinan University Press*, 2012.P41
Fig.12: ‘Review de Culture’ International Edition 54. *Macau: Instituto cultural*, 2017.P76.
Fig.14: Original image from: Tang Guohua, Guangzhou Shameen Modern Architecture[M]. *Guangzhou: South China University of Technology Press*, 2004.P373, P218, P232.

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