

# Analysis of the Local Characteristics of Macao Traditional Pawnshop Architecture Art

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## Abstract:

For a long time, China's pawnbroking industry has been highly valued by the academic circles, but in sharp contrast, the pawnbroking buildings that co-exist with the pawnbroking industry have not received due attention. Macao traditional pawnbroker building is a special type of Chinese commercial building, which integrates defense, commerce and Chinese and western architectural cultures. It has played an important role in the urban development of Macao, is an important architectural cultural heritage, and is a precious wealth for the study of human civilization and economic development. This paper attempts to analyze the "local" characteristics of the architectural structure art from the spatial form of Macao traditional pawnbrokers, in order to arouse more scholars' attention to the development of this kind of architecture.

## Keywords:

Macao, Traditional Pawnshop, Building, Localization

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## 1. Introduction

What exactly is the pawnshop building like? Perhaps, as recorded in historical data, "coldness" and "seriousness" left a deep impression on people. Macao's traditional pawnshop architecture is the symbol of an industry and the carrier of an era in Macao. [2] No matter what kind of material or structure is used for the defense-oriented building structure system, the important feature of pawnshop building is firmness. Pawnshop building not only uses the wall of the building as a defense tool, but also defends the non-solid wall parts such as doors and windows. It is precisely because of the appearance of this special architectural product that it can better express the local characteristics of its art, that is, it combines the Lingnan culture with the local characteristics of Australia and finally forms a unique architectural form, which shows strong local characteristics from the architectural structure, modeling and artistic characteristics of pawn shops. In this paper, the structure, function, artistic expression of the pawnshop itself and other micro-levels, multi-perspectives, cross-disciplinary realization of the investigation of Macao traditional pawnshop

architecture. The existence and protection of Macao's traditional pawnshop buildings will play an irreplaceable role in further promoting cultural exchanges and development, helping people understand the history of human civilization and opening up the future. At the same time, the traditional pawnbroker buildings in Macao bear certain historical sites, which play a special role in studying the development of such buildings and economic activities. [2] However, with the development of society, this kind of special building group is facing the extinction of a large area, and once the historical buildings disappear, they can't be recovered. Therefore, the protection of traditional pawnshop buildings needs to be strengthened urgently.

## **2. Spatial Form of Macao Traditional Pawnshop Architecture**

### ***2.1. Spatial morphological characteristics***

Macao's traditional pawnshop architecture inherits the characteristics of Lingnan traditional architecture. [3] Moreover, the formation of this type of architecture is also a branch system of the development of Chinese traditional pawnshop architecture. However, the formation of temple economy is the "prototype" of Chinese traditional pawnshop architecture. The traditional pawnbroker buildings in Macao usually keep a certain distance from the surrounding buildings when they are built, so as to prevent the fire in the nearby buildings from spreading to our shop. The lower section of the wall facing the street will be built with hemp stone as the periphery, with copper plates in the middle, and the inner wall will be laid with blue bricks, in order to prevent bandits from digging the wall. There are many small windows on all sides of each floor. Small stones will be laid inside the windows, and small iron sticks will be erected in the middle, so that only the air can circulate. Although even kittens can't get in and out, they can be used as loopholes when necessary to resist the attack of bandits. This kind of sturdy building is simpler in the city. If it is usually built in a brief pass in the villages and towns, it will be used as a bunker, and it will be equipped with guns and ammunition for the purpose of defense. Generally speaking, the traditional pawnbroker buildings in Macao are divided into two independent buildings: the pawn building and the goods building. This is based on the layout of traditional pawnshops. On the one hand, it can meet the operation process of pawnbroking, on the other hand, it can achieve the functions of anti-theft and security.

### ***2.2. Spatial structure mode***

The spatial structure mode of traditional pawnbrokers in Macao, especially the uniqueness of its construction, is firstly influenced by the whole architectural form, and secondly by the internal demand of architectural space. This special spatial pattern is in sharp contrast with the spatial patterns of pawn shops in other areas. Therefore, according to the regional environment, the author summarized the main modes as follows:

#### ***2.2.1. Centralized layout***

Centralized layout is a way to connect the upper and lower spaces by stairs. This can also be well reflected in the traditional pawnbroker buildings in Macao. It is not only the layout of the whole building, but also the layout of the interior of the building. The traditional pawnbroker buildings in Macao, whether it is the pawn building or the goods building, connect the lower and upper spaces of the buildings through stairs.

### 2.2.2. Transition space mode

The transitional space connection mode is more reflected in the relationship between buildings, which can connect the building monomer of the building into a unified whole through the transitional space. For example, there will be a “cold lane” in Decheng, Macao, between the Danglou and the Cargo Building in order to prevent fire and guard against theft (Figure 1, Figure 2). In this space, the “cold lane” not only plays its original construction significance, but this special space is also a “bridge” connecting the pawn building and the goods building, which harmoniously connects the two originally separated buildings together.



Figure 1. Macao Decheng Press Cold Lane.

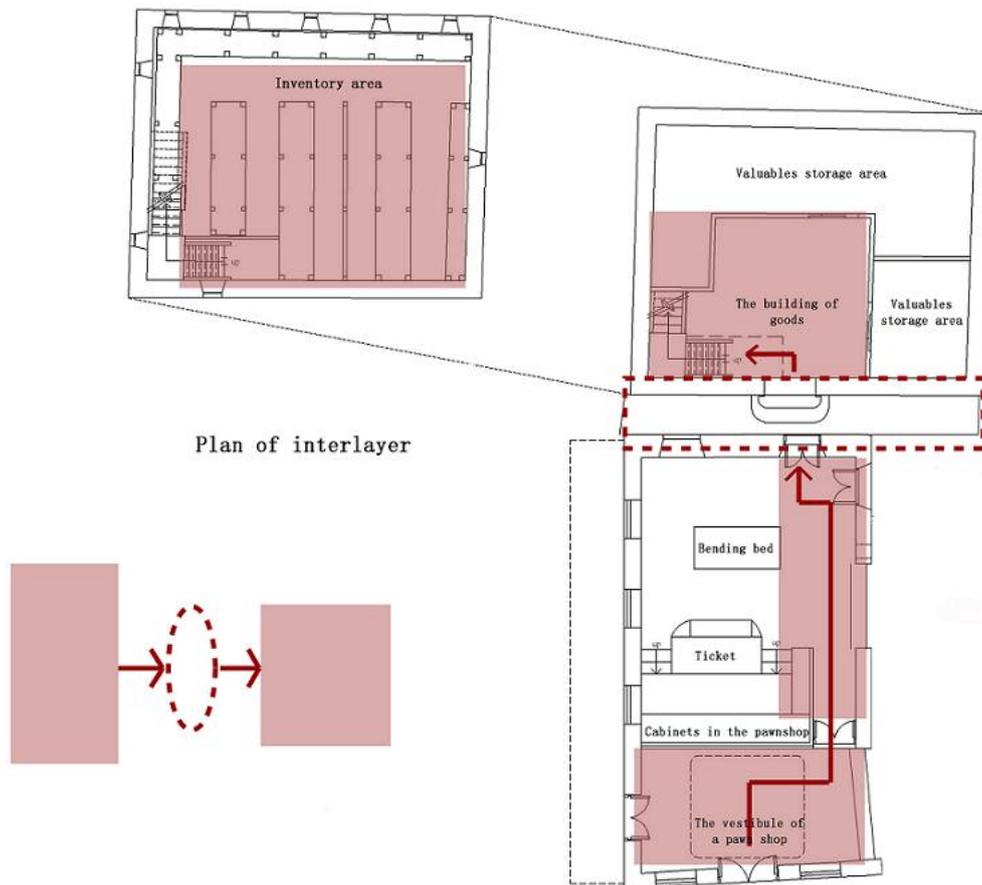


Figure 2. Transition space diagram.

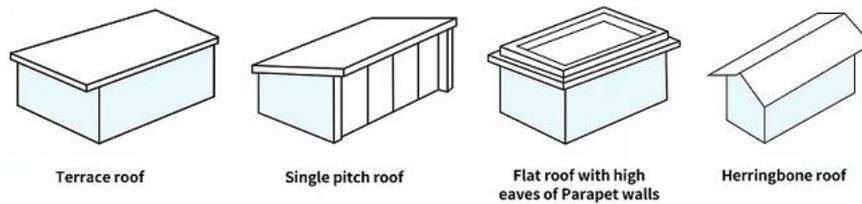
## 3. Macao Traditional Pawnbroker Architectural Modeling

### 3.1. Roof modeling

The architectural style, structural modeling, artistic features, decorative techniques and other tangible assets of Macao’s traditional pawnbrokers all reflect Macao’s

inherent cultural temperament and the process of social change. The traditional roof of Macao's traditional pawnshop was adopted in the early stage, and later some western elements were added in the development process. In terms of materials, most traditional pawnbroker buildings in Macao adopt wooden roof, and at the same time, influenced by western culture, herringbone truss roof will be adopted in form.

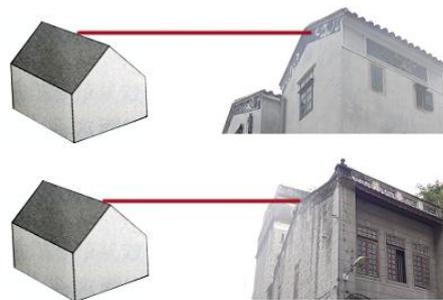
Because of its simplicity, practicality, less consumables and stable structure. At the same time, the roof of traditional pawnbrokers is influenced by traditional Chinese architecture. As a result, the roof of Macao's traditional pawnshop building has a western front, with a truss-supported sloping roof behind it. This kind of roof often appears in the roofs of buildings. In addition, the roofs of traditional pawnbrokers in Macao include flat roofs, single-slope roofs, parapet-overhanging flat roofs and herringbone roofs (Figure 3). Although there are various forms of pawnbrokers' buildings, the roof forms of traditional pawnbrokers' buildings in Macao can be classified into two types: traditional hard peak and flat roof, and most of them are traditional ones.



*Figure 3. Roof types of traditional pawnbrokers in Macao.*

### **3.1.1. Hard mountain roof**

The traditional pawnbroker building in Macao is simple, usually in the form of a hard mountain roof, and the whole building presents a slope shape. Gables will be in the form of earthenware walls, simple and generous, without too much decoration. In the existing pawnshop buildings in Macao, hard mountain roofs are often combined with other types of building roofs (Figure 4).

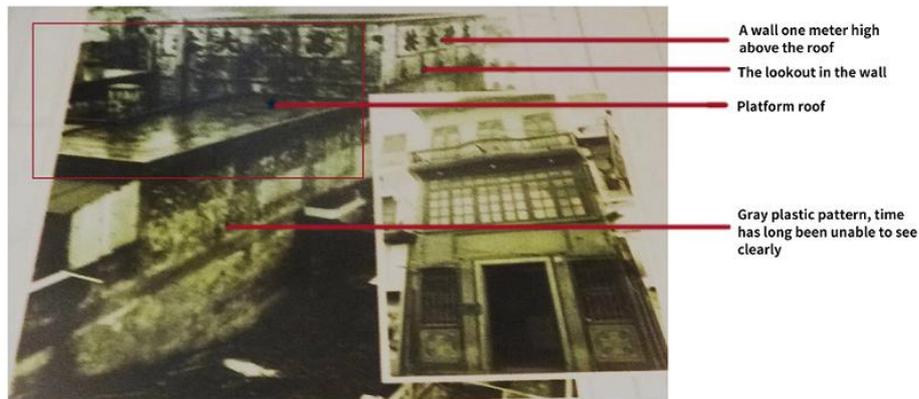


*Figure 4. Hard mountain roof of Macao traditional pawnshop.*

### **3.1.2. Flat roof**

Flat roof simply means that the top of the building is flat. Flat roofs are very rare in the roofs of traditional pawnbrokers in Macao, and there are only high-rise pawnbrokers in the existing traditional pawnbrokers. However, there is no data to record whether the roof of the pawnbroker is the original building roof or the subsequent development and reconstruction. Only the author's research results can be used as the standard to explain the architectural features of building roofs. The change of flat roof building structure system is the technical reason for its appearance. At first, the flat roof was a local platform similar to the balcony, and then gradually developed

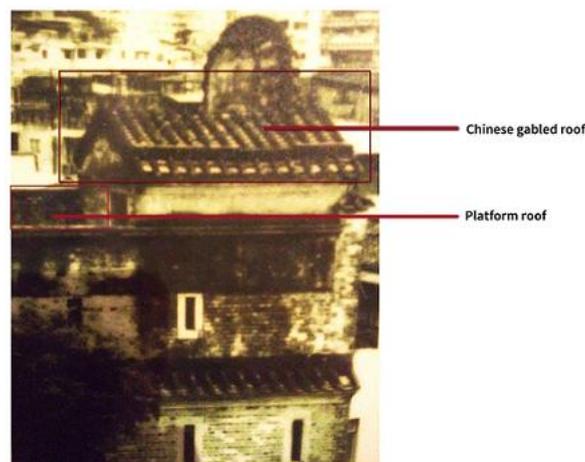
into the whole flat roof. The pawnbroker building in Macao is characterized by its flat roof with parapet instead of raised roof, and its shape is open (Figure 5).



*Figure 5. Flat roof of Macao traditional pawnshop.*

### **3.1.3. Composite roof**

This typical roof shape is a unique roof shape feature of Macao's traditional pawnshop roof. This is also due to the particularity of this building. In the previous part, the hard mountain roof and flat roof that appeared in the traditional pawnbrokers in Macao were described in detail and illustrated. The first two roof forms basically appear in the roof forms of pawn shops, while the building form of pawn shops is often a special roof form formed by combining the first two roof forms. It is also called "composite roof" by the author. This special roof form is the main roof form in the commodity building of Macao's traditional pawnshop, mainly due to the construction characteristics of Macao's traditional pawnshop. In the article, the architectural form of the cargo building has explained the architectural function of the cargo building, so it is not repeated here. But it is precisely because of the cargo building that a watchroom will be built at the top for staff vigil. Therefore, the original flat roof building form of the goods building will build a one-meter-high fence to form a flat roof of platform type, and then a watch room will be built at one end of the platform for vigil. The roof of the house is a hard mountain roof, which forms the composite roof described in this section (Figure 6).



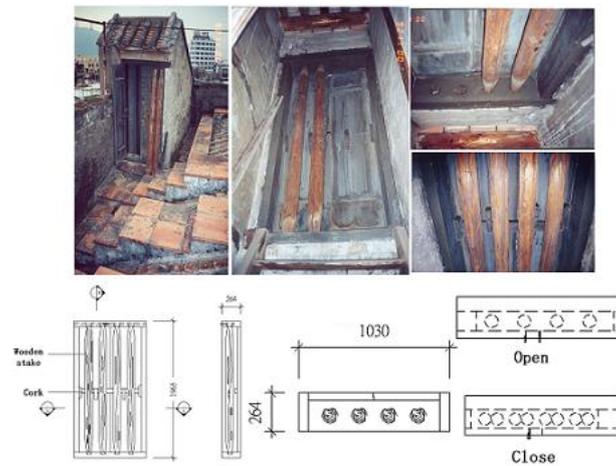
*Figure 6. Composite roof of Macao traditional pawnshop building.*

### 3.2. Features of doors and windows

In Macao's traditional pawnshop buildings, doors and windows are part of the building's defense system.

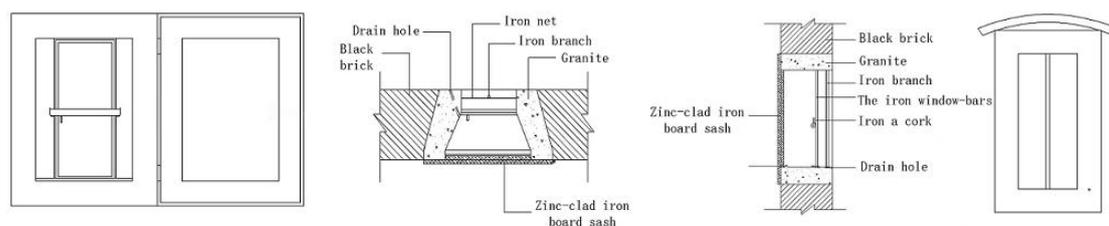
#### 3.2.1. Traditional doors and windows

The entrance of the traditional pawnbroker building in Macao usually consists of three doors. The outer group consists of folding fan doors. There are woodcarving inlays on the door leaf, and the upper part is semi-transparent, which is more decorative than practical. The second door is the "cage" used in traditional dwellings in Guangdong. Cage is made of fine wood. Its function is like today's iron gate, which plays the role of theft prevention, ventilation and lighting. The most important door is the traditional plank door. There is a gate bolt in the door, which is extremely strong. It also acts as an anti-theft function. At the same time, the door in Macao's traditional pawnshop building is also unique, as shown in Figure 7, the part of the goods building in Macao's traditional pawnshop building.



**Figure 7.** Structural diagram of wooden door on the top floor of Macao traditional pawnshop building goods building.

The windowsill is carved from a whole stone, and the front end is provided with a small hole, so that rainwater can flow to the outer wall through the small hole. There is a water stop line behind the window sill, which can prevent rainwater from flowing into the room. Each small window is equipped with an inner window sash on the inner wall, which is made of wood, and its surface is protected by iron sheet. From the type of small window in the cargo building, we can know that its functions are mainly theft-proof, waterproof, ventilation and shading. However, the windows of traditional pawnbrokers in Macao are influenced by western culture, and their structural forms are also different (Figure 8, Figure 9).

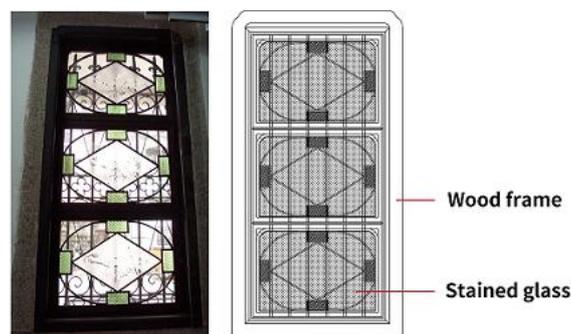


**Figure 8.** Structure diagram of zinc-iron wooden window.



**Figure 9.** Package zinc-iron wooden window.

Manchuria window and right-angle window are the typical representatives of pawn buildings in Macao's traditional pawn shops. The most traditional way of "Manchuria Window" is to make the outer frame with mortise and tenon structure, and to etch the inner liner with tinted glass. In the design, the outer frame is stable and orderly, and the position of the inner container should not be larger than 45cm, so as to ensure the stability of the structure. In terms of color registration, the glass etching will not be scraped off. Moreover, it can achieve the gradual change effect, even though it still lasts for many years. The "Manchuria Window" of the traditional pawnbroker building in Macao is the "Manchuria Window" that inherits the arcade building in Guangzhou. "Manchuria Window", as a product of a specific historical period in Guangzhou, to a certain extent, illustrates the integration of Chinese Lingnan traditional culture and western architectural culture. No matter in the past or now, the construction form of this special window is closely related to Lingnan architecture, and it has become a special symbol in Lingnan architecture components (Figure 10).



**Figure 10.** Structure diagram of Manchuria window in Decheng press building.

Right-angle window is the simplest window, and it is also the most used window type in Macau. Generally, the opening of the window is square, with a width of 1-1.5m and a height of 1-2 times the width. Window lintels are usually supported by stone arches or wooden beams. The distance from the floor to the window sill is 0.6-1m, which aims at better indoor lighting.

Combined with the above theoretical exposition and detailed analysis of doors and windows, the author summed up the traditional patterns of doors and windows in Macao's traditional pawnbroker buildings, and the moral of the patterns is basically the good wishes of auspicious blessings.

### **3.2.2. Western-style doors and windows**

Common doors in Macao's traditional pawnbrokers include Portuguese semicircular arches, cast iron doors, ordinary push-pull iron doors, folding fan doors, etc.

The semicircle arch is bound to be influenced by western culture in the form of decoration. There are layers of concave lines in the doorway. In addition, the upper part of its door leaf is made into a 1/4 circular curve along the semicircle arch. The carvings on the door leaf are divided into three parts: the upper, middle and lower parts, and each department is carved into a vertical shutter. This kind of construction form is popular at the end of 19th century and the beginning of 20th century, and it is generally used as the door of a building. However, the entrance of the cargo building generally consists of two iron gates, and the outside iron gate is made of cast iron, which is about three meters high and ten centimeters thick. Inside the door is an ordinary push-pull iron gate with flowers.

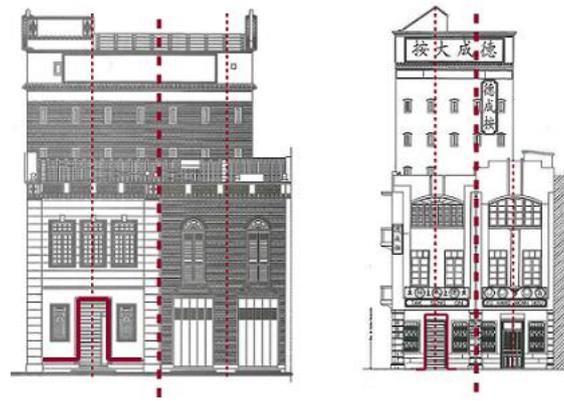
Western-style windows in Macao's traditional pawnbroker buildings are typically represented by shutters. Shutters are a major feature of Macao. The edges of wooden shutters and glass windows are almost all made of local or inland Chinese fir. Teak or sandalwood imported from Goa or Singapore are expensive and used as gates and leaves. In order to make up for the soft texture of inferior wood, they are usually painted with various colors to prevent corrosion and insects. The advantage of shutter is that it can ventilate, can't see inside and outside, and has strong privacy, so it is a very practical window. However, there is no evidence for the origin of this window, so some related scholars speculate that it was introduced by Portuguese. Therefore, Macao's traditional pawnbroker architecture also seeks this feature, and this style of window is adopted in the pawnbroker architecture. At the same time, the shutters in Macao are movable, and the circular shafts are sawed at both ends of the shutters and embedded in the circular eyes on the inner side of the window edges, with a spacing of about 4cm. There is an adjusting rod perpendicular to the blade, which is connected with the blade by sheep's eye bolts and can move up and down to adjust the angle of the louver. They are simple, practical and ingenious in structure.

These impressive windows are not only the unique scenery of Macao architecture, but also a relic of local history and culture. Little is known about this type of windows in today's buildings. The unique attraction of Macao's traditional pawnbroker architecture has noticed the proportion of doors and windows and the coordination of architectural relations from western-style architecture, and many western-style windows and holes often change in the wall part, showing trapezoidal plane openings. If the hole is wide, the wall will be inclined to get the most light.

### **3.3. Building Facade**

The facades of traditional pawnbrokers in Macao are relatively simple, without too many decorative features. Basically, they are built according to the plane of the building, without excessive modelling technique. In the subsequent development and maintenance of the building by the owner, the facade has been decorated in different degrees, so it also presents different types of facade shapes (Figure 11).

At the same time, Macao, as the source of communication between China and the West, introduced new western construction technologies, especially in the western masonry technology. At the same time, the introduction of new technologies also brought in new materials and development. Traditional pawnbroking buildings in Macao usually use granite stone walls and green brick walls as materials. The selection of these walls is more suitable for the hot and humid weather in Macao. The most widely distributed rock granite in Macao is usually laid by wet masonry. After using blue brick masonry, they won't do painting.



**Figure 11.** *Facade of Macao Traditional Pawnshop Building.*

As bluestone brick is economical, beautiful, durable and suitable for local rainy climate materials, the technology of material production and construction is also practical. The use of blue bricks requires firm quality, crisp sound, sharp edges and corners, high hardness and low water absorption. Masonry is orderly and with small gaps. Build by laying bricks or stones method has a suitable one, three suitable one, five suitable one and so on. In addition, there are stone wall feet to ensure a good moisture-proof effect of the wall body. Depending on the location, some traditional pawnbrokers in Macao will build gables while others will build parapets, as shown in the comparison chart of Figure 12.



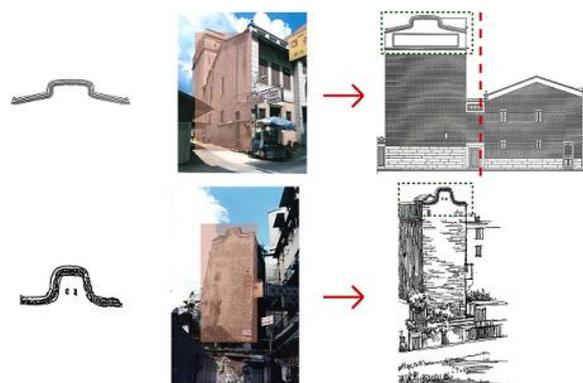
**Figure 12.** *Comparison of the development of traditional pawnbroker buildings in Macao.*

### **3.3.1. Facade of traditional building**

The facade of Macao's traditional pawnshop still follows the characteristics of Chinese traditional architecture, that is, it is influenced by Lingnan traditional architecture. [4] To some extent, it shows that the facade of traditional pawnshop architecture depends more on the demand of architectural space form. Generally, the facade of a building can only represent the entrance facade of the building, with little change, while the side facade has rich changes. Therefore, building facades can be divided into two types, namely, one is a “gable” facade, and the other is a “straight” facade. The “gable-shaped” facade often presents a “convex” character, and the exterior facade can't see the shape of the building roof. Even some buildings have high facade walls, so this kind of wall facade can be regarded as a “straight” deformation. The analysis of this modeling situation can extract the original morphological features from the types.

In the traditional pawnbrokers' buildings in Macao, herringbone and trowel-shaped buildings are often used. Generally, herringbone gables are used, which is simple and practical, with low economic cost. There are also changes in the gable walls in the traditional pawnbroker buildings in Macao, the most obvious feature of which is the appearance of the gable walls. The earthenware wall also symbolizes the official hat and ears, which means "top spot". It can only be used in places of fame, and it is also a symbol of well-off family at that time. Although the earthenware walls are dusty and ugly, the materials used are exquisite, and the polished blue bricks are superior. From the front, the towering walls on both sides showed a trowel shape, and from the side, they looked like a "convex" character. It can be seen that the traditional pawnbroker architecture in Macao at that time was obviously influenced by the architectural features of Lingnan.

In the construction of Lingnan dwellings, the "trowel-shaped" gables are usually used. The gables of this shape have beautiful lines, and the changes are larger than those of the "herringbone" gables. The shape of the gables is modeled after the ancient official hat, which plays a more important role in architectural decoration (Figure 13). Sometimes a parapet will be built during construction. The wall facade of the traditional pawnbroker building in Macao is also "straight". The facade of the building is the element of virtual-real relationship change only through individual balconies and other structures, which shows the closure of the building facade as a whole. [5]



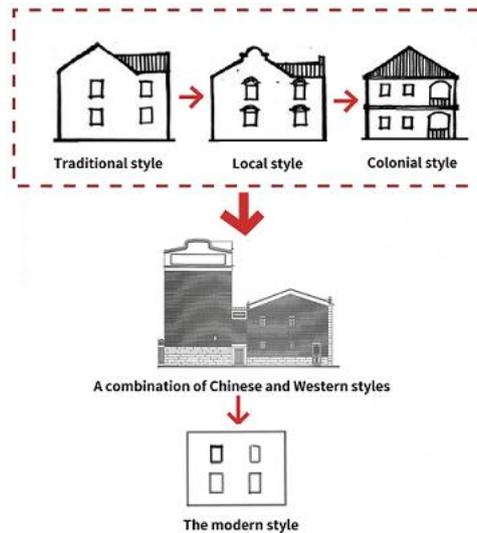
**Figure 13.** "Trowel" wall of Macao traditional pawnshop building.

### **3.3.2. Architectural Facade of Chinese and Western Style**

The combination of Chinese and western facades of traditional pawnbrokers in Macao more reflects the integration of Chinese and western cultures, and enriches the decoration of the facades. Soften the facade decoration of serious and closed traditional buildings. For example, Macao Desheng Pawnshop Building is located at No.64, 5th Street, the beginning of October. The pawnshop building was built in the 19th century. The lower floor was originally a pawnshop building, and there was a separate high-rise building behind the pawnshop building as a place to store pawned objects. [6] The storage building has five floors. To ensure safety, only small windows are opened in the upper part towards the inner courtyard, and no windows are opened along the side of the street. The whole exterior wall is made of blue bricks, and the upper right side of the front adopts semi-circular voucher-shaped windows, with wooden shutters on the outside. Obviously, it is influenced by the shape of Portuguese architecture, and it also reflects the blending of Chinese and western architectural styles in Macao in the 19th century. Today, the building is still well

preserved, and we can clearly see the characteristics of the pawnshop building shape. [7]

Generally speaking, the shape of the wall body of Macao's traditional pawnshop building is mainly presented in the form of the traditional building facade and the combination of Chinese and western building facades, which became the main shape of the building at that time and formed a unique architectural style in the later development, as shown in Figure 14.



*Figure 14. Evolution diagram of the facade of traditional pawnbroker buildings in Macao.*

#### 4. Conclusions

Macao, a city free from the destruction of war, has preserved its urban features and architectural styles to the greatest extent. Although it has developed into a metropolis with high-rise buildings, historic buildings with a long history and complete preservation can still be seen everywhere in the city. Macao's traditional pawnbroker architecture is a comprehensive product of Macao's functional architecture, economic environment and the blending of Chinese and western cultures. It reflects the characteristics of pawnbroker with pawnbroker as the main goal, economic and cultural environment as the auxiliary condition and structure and form as the external expression. It also reflects the particularity of Macao's pawnbroker industry and pawnbroker architecture, as well as the cultural and ecological phenomena contained in Macao's pawnbrokers in historical periods.

#### Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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