

# *Cultural Characteristics of Huizhou Architecture in Ming and Qing Dynasties and Discussion on Pop-up Book Paper Art*

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**Abstract:** Huizhou architecture, as one of the eight major architectural schools in ancient China, presents a wonderful and colorful material world for future generations with its unique design form language and profound design thought connotation, and also creates a spiritual world with oriental aesthetic characteristics. Based on the ancient village of Hongcun, Shexian County, Huangshan Mountain, Anhui Province, this paper analyzes the design practice of Huizhou traditional residential buildings in pop-up book, and makes relevant interactive creative products to "activate" the "sleeping" Huizhou document files.

## 1. Foreword

Traditional residential buildings in Huizhou area are also important elements in the field of ancient architecture in China, with a long history and an important historical position in traditional architecture. Huizhou architecture has always bred Huizhou culture with unique regional characteristics with its concise and elegant artistic style. With the arrival of the new media era and the rapid development of modern digital information technology, traditional paper books have been greatly criticized. It has hindered the spread of Huizhou culture. However, there are still many problems to be solved in the process of innovative design of market culture. Pop-up book-related books are rarely mentioned in China, and most of pop-up book still import European and American children's books. Fortunately, in recent years, due to the emergence of many Asian collectors, these minority interests have gradually begun to enter the audience's field of vision. Under the wave of new media, we should not rely too much on the old forms, return to the perspective of Huizhou cultural essence to seek a way to integrate the two, and practice the creation of Huizhou residential buildings and pop-up book[1-2].

## 2. A summary of the research on Huizhou Ming and Qing architecture

Hui culture has a very special position in China. Hui culture, Tibetan culture and London culture are also called the three major regional cultures in China. Through literature analysis, it is found that compared with domestic scholars' research on pop-up book, foreign scholars' research fields are more extensive and their technology is more adequate. There are many reference cases of pop-up book

abroad, but most of them take fairy tales as examples, such as Alice in Wonderland, Thomas Train, Anne Dollhouse with Red Hair, Jack the Giant Killer, etc., but pop-up book is not as rich in traditional culture as China, such as Song Dynasty-Three-dimensional Riverside Scene at Qingming Festival, Opening the Forbidden City and Silk Road. Therefore, under this background, there is still a lot of room for exploration in the pop-up book. This topic explores the Huizhou traditional residential building, which is the most typical characteristic element in Huizhou culture, from a unique perspective, and tells it in the form of pop-up book, combining traditional culture with modern design to create a pop-up book of Huizhou-style architecture transformed from plane to three-dimensional form.

## **2.1 The significance of Huizhou architectural culture**

The traditional architectural culture of Huizhou folk houses is one of the marks of our Chinese architecture, which is realized by creating products with Huizhou's unique artistic style. With pop-up book's expression, books can be liberated in form and function. The use of materials and structures enables the two-dimensional book to achieve spatial freedom, which enables readers to increase their interaction with books in the process of reading and enhance their sense of participation and experience. Compared with boring and professional books, based on the study of Huizhou architecture pop-up book, some advantages of this building can be innovated. Pop-up book can make readers have a more intuitive knowledge and understanding of Huizhou cultural buildings, and can arouse readers' desire for knowledge about the contents of books. Pop-up book, as a highly circulated book, is more conducive to the spread of Huizhou culture.

Huizhou culture, as one of the three major regional cultures of Chinese culture, has a very high status and is irreplaceable. When we can identify the unique regional characteristics of Huizhou culture and innovate with pop-up book on this basis, we can design cultural and creative products corresponding to the local culture, and have our own unique way out of the chaos. Culture is the largest real estate resource in a city, and cultural and creative products with cultural connotations will be more meaningful. Taking pop-up book as the carrier to tell Huizhou culture, blending in some historical stories of Huizhou culture as much as possible, is also more conducive to the spread of Huizhou culture, greatly enhancing the existence of Huizhou residential buildings in ancient culture, continuing its context, and popularizing Huizhou culture as the starting point, that is, showing the interest and practicality of pop-up book, highlighting social values, revitalizing traditional culture, and strengthening the self-confidence of Chinese culture, so as to make it unique[3-4].

## **2.2 Feasibility study of pop-up book Wenchuang**

Through the market research and data collection of Huizhou Wenchuang, it is found that there are only a single variety of products about Huizhou Wenchuang, only some craft products and souvenirs, and there are only a handful of popular science about Huizhou culture. As far as Huizhou Cultural Wenchuang market is concerned, the cultural resources are mostly explored and sorted out, with little development and application, and there is still a lot of room for development and improvement. According to the results of market research and data collection, Huizhou cultural and creative products are not experienced and interactive. Books are the most direct carrier of cultural inheritance. The exhibition of Huizhou Ming and Qing architecture in the way of pop-up book not only increases the interest of books, but also contributes to the spread of Huizhou culture. It is convenient for readers to be intuitive, and at the same time, books can be sold as cultural and creative products, which can solve the present situation of cultural and creative products to a certain extent and promote local economic development.

Pop-up book's research abroad covers a much wider range of fields than at home. Pop-up book has

a well-developed design research group abroad, which is much more mature than that in China. It's not hard to find that there are few documents and theoretical books about pop-up book in China. Pop-up book's initial audience was not children, and pop-up book appeared as an adult to popularize knowledge. According to relevant data, at present, children's books are the main themes in pop-up book, and pop-up book abroad covers scientific knowledge besides fairy tales. Literary works are displayed in the form of pop-up book, and they are studied visually and tactilely. However, through investigation, it is found that the market scale of pop-up book in China is increasing year by year. By 2020, the annual growth rate of the market scale is higher than 15%, so it has a good market space. Taking pop-up book's *Opening the Forbidden City* as an example, the book written by Wang Wei, a famous paper artist in China, and his team-Jumping Paper, was released in May 2020 and won the 2020 Children's Book Award of China Press, Publication, Radio and Television in January 2021. The crowdfunding project achieved a good result of more than 3.42 million yuan, and sold more than 200,000 copies in just one year. The books mainly focused on the history of popular science. Later, other pop-up book with China's original cultural symbols as the starting point were originally designed, such as the three-dimensional version of *The Riverside Scene at Qingming Festival: Song Fenghua: Three-dimensional Riverside Scene at Qingming Festival*[5-6].

### 3. Second, the cultural characteristics of Huizhou residential buildings

Huizhou was called "Zhangzhou" in ancient times. Huizhou architecture originated in Hongzhi, Ming Dynasty. Most of the existing Huizhou ancient buildings were built in Ming and Qing Dynasties with masonry as raw materials, masonry walls, wooden beams bearing loads, and exquisite carvings attached to them for decoration. Their fame was due to the rise of the conference. The formation of Huizhou architecture is influenced by Huizhou's unique historical and geographical environment and humanistic concept. The topography of Huizhou area is dominated by hills, which has gradually formed its unique culture. The development of Huizhou culture has gradually affected the structure and style of buildings, thus forming a unique Huizhou architecture. This architectural school integrates landscape and architecture through ingenious conception and flexible layout, and enhances the visual effect of buildings to some extent through the use of some elements such as horse head wall and small blue tiles.

Architecture is a carrier of culture, which reflects certain social ideology and historical culture in an intuitive way. Surrounded by mountains, Huizhou is in a relatively closed geographical environment, gradually developing into a relatively independent regional society and an independent folk unit, forming its own unique customs and Huizhou architecture. Huizhou architecture is obviously different from other folk buildings in China, and it is solid and practical. On the basis of beauty and generosity, we seek natural and elegant beauty. Black and white are the only two colors in the appearance of Huizhou architecture, with black tiles and white walls. Although the white wall has been mottled and vicissitudes of life, the contrast with black is not strong, plus the mottled bluestone door cover and window cover, from a distance, the light and simple style is fully displayed[7-8].

#### 3.1 List of Huizhou residential structures

The most striking feature of Huizhou-style residential buildings is that they are centered on the patio, with the central axis as the main axis and symmetrical inward quadrangles on both sides. This basic shape with the patio as the center and high walls closed is the focus of people's concern. Right in front of the patio is a hall, and the hall is constantly separated from the air well by doors, forming an open activity space. Based on the three-room style of one bright and two dark, it links and combines various forms. There are four common types, as shown below Figure 1:

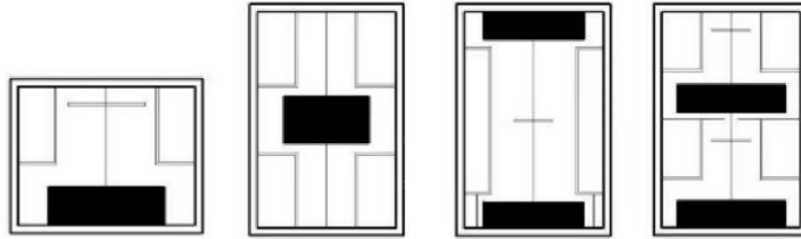


Figure 1 Four structures

Many ancient villages in Huizhou were built in the Song Dynasty, and the architectural form was based on the principle of creation, and the modulus of materials, bricks and points was quantified. Its residential buildings can be subdivided into roof structures, including: small blue tiles, cement tile tubes, small corrugated tiles, cornices and roofs; Horsehead wall, including: bucket-picking type, bucket-sitting type, sparrow-tail type and simplified horsehead wall; Doors and windows, including: door cover, window cover, door cover and canopy; Column foundation, screen and partition, hanging and flower-shaped teeth, stairs, beauty rests, railings, fences, courtyard doors, outdoor works, tables and stools, gatehouses, hall-style, big roof kisses, flying chairs, high-walled deep houses and lattice windows.

### 3.2 Analysis of structural specifications of Huizhou residential buildings

The architectural structure of Huizhou residential buildings mostly adopts the direction of sitting north facing south, paying attention to internal lighting; Load-bearing with wooden beams and wall protection with bricks, stones and soil; Focusing on the hall, he is good at carving beams and painting buildings and decorating roofs and cornices. The layout of residential buildings is symmetrically divided by the central axis, with three rooms in width, with a hall in the middle and rooms on both sides. The front of the hall is called patio, with lighting and ventilation, and the courtyards are nested, creating a deep self-sufficient family living space. The overall appearance and aesthetic feeling of residential buildings are very strong, with high walls closed, horse's head tilted, wall lines scattered, black tiles and white walls, and elegant colors[9].

### 3.3 Huizhou residential building structure color induction

The characteristics of Huizhou architecture are mainly reflected in the village houses, ancestral temples and memorial archways. No matter from site selection, design, modeling, structure, layout to decoration and beautification, Huizhou's mountain characteristics, geomantic will and regional aesthetics are all reflected. The overall color of Huizhou residential buildings is different from other cultural buildings. There is only one kind of simple and elegant color with white walls and tiles, which is restrained and implicit, and generally presents a color scheme with black, white and gray as the main tone , as shown in Figure 2.



Figure 2 Huizhou architecture

Indoor woodcarving in Huizhou residential buildings presents the most primitive appearance of materials in the color of logs. The interior of Huizhou traditional residence consists of wooden beam frame and interior decoration, white wall, stone foundation and masonry floor. The wooden beam frame and decoration can retain the true color of wood, with different degrees of gray as the main color, accompanied by gold with key decoration and cold white with low bricks.

#### 4. Third, the design theme of Huizhou residential building pop-up book

Huizhou archway. Huizhou culture is one of the three wonders of Huizhou ancient culture, and it exists as a "three-dimensional history book" of Huizhou culture. Huizhou archway can't be described only from the perspective of architecture, but it is also a concentrated expression of painting, stone carving and even calligraphy, as shown in Figure 3.



Figure 3. Schematic diagram of the author

Chengzhitang woodcarving Chengzhitang, a folk residence in Hongcun, is widely known as the Forbidden City, which can be called the representative of Huizhou ancient residence. It is characterized by large scale, perfect structure, magnificent decoration and ingenious layout. There are a lot of carvings on the inner beams, and all the woodcarvings are exquisite, and each work is beautifully made, which perfectly shows the exquisite craftsmanship of Huizhou woodcarving , as shown in Figure 4.

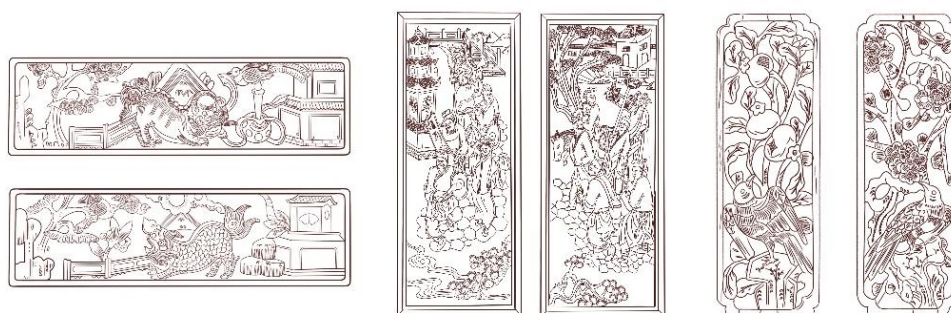


Figure 4. Schematic diagram of the author

#### 5. Conclusion

Books are the most primitive and important carrier and means of information dissemination, and pop-up book is more interesting and valuable than traditional two-dimensional books. Its readability and intuitive design can not only make readers deeply understand the contents of books, but also realize the interaction between readers and books, which changes the traditional two-dimensional



display mode of books, adapts to the development of readers' reading rhythm in today's society, greatly deepens readers' imagination and imagination space when reading books, and realizes pop-up book's reading value. On the one hand, it has realized the connotation value of pop-up book and enhanced the spatial charm of pop-up book. Huizhou culture, as a rare cultural heritage, takes advantage of the characteristics of pop-up book, skillfully designs the two, realizes our own cultural self-confidence with pop-up book as the carrier, enables Huizhou culture to achieve rapid popularization and development, and helps the tourism development of Huizhou culture to a certain extent.

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