

# Application of Paint in Exterior Wall Decoration Design of Buildings

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## Abstract

In recent years, with the advancement of economy and technology, a large number of new materials have emerged for the decoration design of building exterior walls. The process of architectural decoration design costs a high amount of money to demonstrate the luxury of decoration design. In the process of high investment and continuous innovation in design, many designers have begun to think about the diverse forms of art. The expression of artistic forms is not only the application of new materials, but also the diverse expression of traditional materials. Art and design should not blindly pursue high cost investments, but rather need to think more about how to use artistic techniques to provide culturally rich designs for more people. This article takes paint as the research entry point, and through case analysis, summarizes the artistic value and application methods of paint materials in the design of building exterior wall decoration. It is hoped that these studies can provide design ideas for the art of building exterior wall decoration..

## Keywords

Painting, Exterior wall decoration, Art, Aesthetics.

## 1. Introduction

Paint is a type of coating that can firmly cover the surface of an object, playing a protective and decorative role. In the book "Coating Technology", coating is defined as a material that can be covered on the surface of an object using different construction techniques to form a solid film. Paint has a long history in China, initially referring to "oil" and "paint". According to the "Creation Method", the tung oil extracted from tung seeds is an indispensable part of the painting process. China has had a wide range of lacquer producing regions and a large output since ancient times. Lacquer is the juice secreted from the lacquer tree, which becomes an important decorative coating after processing. According to archaeological literature, China improved its painting process as early as 6000 BC. In 1500 BC, it was discovered in caves in France and Spain that paint was used for painting and decoration. In 1500 BC, the Egyptians also produced blue and red paint. Until the 20th century, there was a significant development in paint technology, which had the characteristics of higher glossiness, better flame retardancy, corrosion resistance, greater adhesion, and higher stability. Since then, it has also been widely used in various architectural decoration designs.

## 2. The artistic value of paint materials

### 2.1. Practical value

Paint has a protective function. Applying paint to the exterior walls of a building forms a protective film that can protect the exterior walls and slow down damage to the building. Traditional Chinese architecture uses wood as a building material and is prone to problems

such as moisture and insect infestation during the living process. In order to improve these issues, construction craftsmen applied paint to the exterior walls of the building to achieve protection, as shown in Figure 1. The Forbidden City of China. The polymer coating developed in the Netherlands is applied to European cork, which can undergo hardening treatment. The treated European cork can be as durable as tropical hardwood. The pure inorganic coating developed in Japan also has excellent anti-corrosion, wear resistance, and high hardness properties.



**Figure 1:** The Forbidden City of China

China has a vast territory, with significant temperature differences between the north and south. The winter in northern regions is relatively cold, and the exterior walls of buildings are generally painted in red, paired with a warm color tone of yellow tile roofs to give people a feeling of warmth. The southern region is relatively hot in summer, and the exterior walls of buildings are usually painted in white with gray tiles, presenting a cool color tone. The buildings give a feeling of coolness, as shown in Figure 2. Comparison of Architecture between Northern and Southern China. The intelligent coating developed in the United States can automatically change the color of the coating based on temperature changes, and then affect the indoor temperature of the building. Apply paint to the surface of the building. When the outdoor temperature is low, the paint turns dark and absorbs solar heat, causing the indoor temperature to increase. When the outdoor temperature is low, the paint turns white and reflects sunlight, thereby reducing the indoor temperature. At present, intelligent coatings have been developed in red, green, blue, orange yellow, black, and white, which are several colors.



Architecture in Northern China



Architecture in Southern China

**Figure 2:** Comparison of Architecture between Northern and Southern China



Sweden has developed coatings that can absorb odors. When the coating absorbs the odor in the air, it can stabilize the humidity of the air and release sterilization and disinfection substances. This coating is very suitable for environmental improvement in smoking areas in public places.

## 2.2. Aesthetic Value

Choosing paint materials in the decoration of building exterior walls can enrich the color changes of the building's appearance. Compared with other decorative materials, the application of paint materials has outstanding aesthetic effects and is easier to modify in the later stage. The use of paint can be used for large-scale coloring, as well as for wall painting using painting effects. Large area painting uses techniques such as monochrome, contrasting, and similar colors, and is generally applied to large area building groups, as shown in Figure 3. Riomaggiore, Italy. The visual impact of colors has driven the local tourism industry.



**Figure 3:** Riomaggiore, Italy

Small area coloring is generally manifested as partial decoration, with more exquisite effects and richer patterns and patterns. Common patterns and patterns include auspicious content such as characters, animals, and plants, as shown in Figure 4. Colored decoration of Chinese roof beams.



**Figure 4:** Colored decoration of Chinese roof beams

### 2.3. Spiritual value

The colors of the paint are rich and can be combined in various ways to present different visual effects, bringing people a different spiritual experience. Visual aesthetics is the pursuit of humanity, and artistic spirit is everyone's aspiration. The economical and affordable characteristics of paint materials can bring spiritual and aesthetic enjoyment to people in various regions. The Pokapu area of Cape Town, South Africa is famous for its colorful houses. In the 1860s, initially leased to slaves to live in, when slaves were allowed to purchase these houses, they painted them in color to express their pursuit of freedom, as shown in Figure 5. Colorful neighborhoods in South Africa. Nowadays, it has become a local tourist attraction.



Figure 5: South Africa, colorful neighborhoods

## 3. Artistic and aesthetic expression of paint materials

### 3.1. Village of Colors

The Colorful Valley is located in La Trinidad Village, Baguio City, Philippines. The village is built along the mountain, and the residential buildings form a high and low level. All the exterior walls of the houses here are decorated with different colors of paint. By using multi-color paint as a decorative technique, the urban shanties have added an artistic atmosphere. Due to its unique geographical structure and architectural style, coupled with the passion of the people of Baguio for color, the colorful house complex has become a unique tourist attraction in Baguio City, as shown in Figure 6. Village of Colors.



Figure 6: Village of Colors

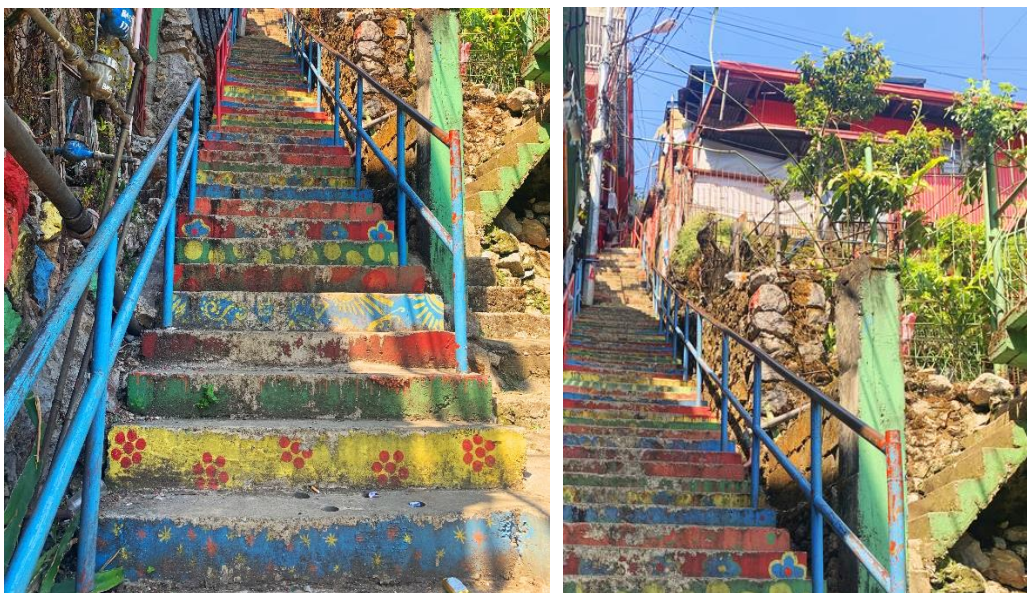


The only way to enter the village is through a suspension bridge, under which lies the turbulent river water. The steel cables of the suspension bridge are painted green to express hope, as shown in Figure 7. Suspension bridge at village entrance.



**Figure 7:** Suspension bridge at village entrance

After entering the village, the main road is the steps, which are painted in colorful colors and various patterns. The walls and rocks are also painted with colorful paint according to the designer's wishes. The village values green ecology, combining colorful colors with plants to create a natural and relaxed environmental atmosphere, as shown in Figure 8. Village Main Road.



**Figure 8:** Village Main Road

The design concept of Colorful Valley is a project created by a team of local villagers, artists, students, and volunteers, originating from Rio de Janeiro and S ã o Paulo, Brazil. The residential buildings in the entire village are constructed in a shanty style, but due to their unique artistic temperament and colorful paint, the buildings give people a unique vitality and bring vitality and popularity to economically underdeveloped villages.



### 3.2. Santorini Island

Santorini Island is one of the islands in the Aegean Sea in Greece. The buildings on the island are well arranged, featuring white houses and blue roofs, attracting many tourists and photography enthusiasts every year. White paint applied on building walls can reflect sunlight and slow down indoor temperature rise. Paired with blue roofs, blue swimming pools, and blue Aegean Sea, it can make the human body perceive a decrease in temperature, slow down the pulse, and calm the mood, as shown in Figure 9. Architecture in Santorini Island.



**Figure 9:** Architecture in Santorini Island

The building color on Santorini Island was originally required to be painted with white lime due to the leader's regulations. White lime has antibacterial effects and can prevent the spread of diseases. There is a local cleaner that appears blue when mixed with lime. As a result, blue and white architectural effects appear on the island. In 1967, during the warlord dictatorship, the law stipulated that all buildings on the island must be painted white and blue to show patriotism. And this architectural image is gradually ingrained in the hearts of the people. Although the law is no longer enforced, most buildings still retain their original color combinations, as shown in Figure 10. A combination of white and blue architectural style. The collision between white paint and blue paint creates a quiet and peaceful feeling in the spatial environment.



**Figure 10:** A combination of white and blue architectural style

## 4. Conclusion

This article analyzes paint materials from the perspectives of artistic value and aesthetic expression forms. The application process of paint reflects the practical value, aesthetic value, and spiritual value of materials. Through actual visits to Villages of Colors in Baguio City, the Forbidden City in Beijing, Suzhou, and other places, the author sorted out the architectural appearance effects created by the use of paint materials in the local area. During the research process, the author consulted relevant literature on paint decoration and compiled cases of paint decorative building appearances from various regions around the world. In the cases sorted out in this article, it can be found that paint has been applied to building exterior decoration for a long time, and has the characteristics of low application cost and rich styles, which has been favored by many designers. During the painting process, designers create different design styles through different color combinations, reflecting the local cultural characteristics. This study introduces paint materials through a combination of case analysis and theoretical research, providing theoretical reference for the application of paint materials in building exterior design.

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