

# Application of Chinese Traditional Mural Materials in Comprehensive Painting Decoration of Modern Architectural Walls

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**Abstract:** *Mural painting, as a significant form of traditional architectural decoration, plays a crucial role in enhancing the artistic quality of buildings. The application of traditional materials and techniques in the comprehensive painting decoration of modern architecture represents an innovative approach to traditional art. Traditional Chinese murals, passed down through generations, are a treasured artistic heritage of the Chinese nation and an important cultural legacy. The production process of these murals is highly procedural, with standardized material usage. This study focuses on the application of traditional Chinese mural materials in modern architectural wall decoration, analyzing the material techniques and conducting practical research to explore new comprehensive painting decoration effects. By integrating the concept of cultural inheritance and innovation, this research investigates the use of traditional materials in modern architectural wall decoration, creating works that produce novel artistic effects in visual art. The study of traditional materials in contemporary architectural decoration is a valuable exploration of the inheritance and innovative application of Chinese traditional mural art. This research proposes an innovative method for integrating traditional mural materials with modern architectural wall decoration.*

**Keywords:** Chinese traditional murals, materials, modern architecture, comprehensive painting, application

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## 1. Introduction

Mural painting is one of the earliest forms of human civilization. Chinese mural art reflects the characteristics and styles of different historical periods, from early rock paintings to the murals of the Xia, Shang, and Zhou dynasties, showcasing the societal development and artistic styles of those times. Through mural paintings, we gain deeper insights into the lifestyles, values, and aesthetic pursuits of ancient Chinese people. Broadly, mural painting refers to various forms of art created on natural or artificial walls, primarily the internal and external surfaces of buildings, through techniques such as painting and carving. This includes prehistoric rock paintings, grotto murals, and geoglyphs. Narrowly, mural painting mainly refers to palace murals, tomb murals, grotto murals, and temple murals (Wang, 2020).

Traditional murals are significant decorations in traditional Chinese architecture. From royal palaces to common houses, and from religious buildings like temples and Taoist shrines to

tomb structures, murals are prevalent as architectural decorations, as illustrated in Figure 1 and Figure 2. These murals, from various periods, are found in traditional buildings across different eras (Hu, 2020).



**Figure 1: Model of the interior decoration of the Shakyamuni Pagoda at Buddha Palace Temple**  
Source: The researcher



**Figure 2: Mural decoration in the building of Zhenguo Temple, Shanxi**  
Source: The researcher

The materials used in traditional murals are fundamental to their creation and play a decisive role. Research indicates that these murals still employ traditional materials. However, the development and inheritance of traditional mural materials face several challenges:

**Source and Scarcity of Materials:** Most pigments and adhesives used in traditional murals are natural materials, such as mineral pigments and plant gums, which are tedious to collect and process.

**Technology Inheritance and Skill Loss:** Traditional mural painting techniques are passed down through master-disciple relationships. However, modern education and career diversification have reduced young people's interest in this field, leading to the loss of many traditional techniques.

**Material Aging and Conservation Problems:** Traditional mural materials are prone to aging, fading, and peeling over time. Due to insufficient funding, technical expertise, and research support, many murals cannot be effectively preserved.

**Impact of Modern Environmental Pollution:** Pollutants such as acid rain and industrial exhaust accelerate the aging and destruction of mural materials.

**Cultural Identity and Value Perception:** With modernization and globalization, traditional culture has declined in many areas. The lack of awareness of the cultural and artistic value of traditional murals has resulted in insufficient social support for their protection and inheritance. This study investigates traditional mural materials from various aspects, including material, process, and color, to excavate and revitalize the essence of Chinese traditional culture and art contained in ancient murals. Additionally, it explores modern replaceable materials to alleviate

the scarcity of natural resources while respecting tradition. These measures aim to mitigate the challenges in the development and inheritance of traditional mural art, promoting its sustainable development and inheritance.

## **2. Chinese Traditional Mural Painting Production Process and Materials**

Mural art, as one of the most enduring forms of artistic expression, can be broadly categorized into two types based on production methods: painted murals and crafted murals. Painted murals, which are the focus of this study, are further divided into dry and wet frescoes. Traditional Chinese murals predominantly fall under the category of dry frescoes, which are created using water-soluble pigments applied to walls composed of a mixture of coarse and fine soil, sand, and fibrous materials. This technique has been meticulously documented by Liu Lingcang in his seminal work, *The Production and Techniques of Traditional Frescoes*, published in the first issue of *Art Research* in 1984 (Liu, 1984). Liu's work provides a comprehensive overview of the materials, techniques, and procedural intricacies involved in the creation of traditional Chinese murals, offering valuable insights into the historical and cultural significance of this art form.

The materials and production methods employed in traditional Chinese mural painting are highly systematic and procedural, reflecting the sophisticated craftsmanship and deep cultural heritage of ancient China. Ancient murals were typically painted on clay-based surfaces, which consisted of three primary layers: the support body, the base layer, and the drawing layer. These layers can be analogously compared to the human body's skeleton, muscles, and skin, respectively. The durability and preservation of murals are heavily dependent on the structural integrity of the support body and the base layer, which serve as the foundation for the artistic work (Lian, 2023).

### **2.1 Mural Production Materials**

The support body of traditional Chinese murals is typically constructed from materials such as bamboo-woven walls, green brick walls, and rammed earth walls. These materials were chosen for their durability, availability, and compatibility with the local environment. In certain regions, artisans employed glutinous rice mortar, a unique material containing alkaline ions that endow it with self-repairing properties. This innovative use of organic materials highlights the ingenuity of ancient Chinese craftsmen in addressing the challenges of mural preservation (Zhang, 2024).

The base layer, which serves as the intermediary between the support body and the drawing layer, is usually composed of a mixture of clay, sand, and fibrous materials, as illustrated in Figure 3. These materials were locally sourced, with variations depending on the geographical region. The soil used in the base layer is typically raw or yellow soil, while the sand is often river sand, categorized into coarse, medium, and fine grades. Fibrous materials, such as hemp, straw, wheat straw, and cotton, were incorporated to enhance the structural stability of the base layer. In some regions, artisans also used yak and sheep hair for added strength and flexibility. The final layer of the base is often brushed with kaolin clay, a fine, white clay that refines the wall surface and prepares it for the application of pigments (Liu, 1984).



**Figure 3: Materials for making the base layer**

Source: The researcher

## 2.2 Process of Making a Mural

The creation of a traditional Chinese mural begins with the preparation of the base layer, a meticulous process that involves six distinct steps: the fiber layer, the coarse mud layer, the medium mud layer, the fine mud layer, the sand mud layer, and the lime paste layer, as depicted in Figure 4 and summarized in Table 1. Each layer is carefully mixed with mud, sand, and fibrous materials in specific proportions, then scraped and smoothed to achieve the desired texture and firmness. The final layer, often composed of lime paste, provides a smooth, white surface that facilitates the drawing of the color layer. This multi-layered approach ensures the structural integrity of the mural while providing an optimal surface for artistic expression (Lian, 2023).



**Figure 4: Wall making process**

Source: The researcher

**Table 1: Layers of the Mural Base and Their Characteristics**

Number of Layers	Materials	Production Requirement	Effect
First layer	Hemp fiber	Very rough texture	Foundation
Second layer	Coarse Mud Layer	Very rough texture	Firmness
Third layer	Medium Mud Layer	Slightly rough texture	Firmness
Fourth layer	Fine Mud Layer	Fine texture	Leveling
Fifth layer	Sand and mud	Smooth and fine texture	Leveling
Sixth layer	Sandy mud layer	Very fine texture	Preparation for drawing

## 2.3 Fresco Painting Pigments

The pigments used in traditional Chinese murals are predominantly derived from natural mineral sources, supplemented by plant-based and earth-based colors. Common pigments include earth yellow and earth red, which are derived from iron oxide, white from lime, red from cinnabar, and blue from blue copper ore, as shown in Figure 5. Natural mineral pigments are highly valued for their stability and longevity, as they retain their original colors over time



without significant fading or degradation. This makes them the preferred choice for traditional Chinese painting, where color permanence is of paramount importance (Wang, 2008).



**Figure 5: Pigments of natural substances**

Source: The researcher

## 2.4 Traditional Chinese Mural Painting Process

The traditional process of mural painting involves several carefully orchestrated steps, as illustrated in Figure 6. The first step is fixing the drawing, where the design is transferred onto the wall according to its intended size. This is followed by copying the drawing, a process in which the design is meticulously traced onto the wall by connecting dots with lines, often using ink to outline the drawing. The next step is color block classification, where the mural is divided into sections based on color, and pigments are applied accordingly. Finally, the mural undergoes detailing and adjustment, where fine details are added, and the overall hue and composition are refined to achieve a visually impactful artistic effect (Liu, 1984).



**Figure 6: Mural painting process**

Source: The researcher

The production process and materials of traditional Chinese mural painting reflect a profound understanding of material science, artistic technique, and cultural heritage. From the selection of locally sourced materials to the meticulous layering of the base and the application of stable mineral pigments, each step in the process is designed to ensure the longevity and aesthetic quality of the mural. However, the preservation of this ancient art form faces significant challenges, including the scarcity of traditional materials, the loss of technical expertise, and the impact of environmental degradation. By studying and documenting these traditional techniques, this research aims to contribute to the preservation and revitalization of Chinese mural art, ensuring its transmission to future generations.

### 3. The Application of Traditional Chinese Mural Materials in Modern Architectural Wall Decoration

Mural painting has long been an integral component of human living environments and decorative arts, serving as a medium for cultural expression, aesthetic enhancement, and storytelling. In contemporary architectural design, traditional Chinese mural styles and materials are increasingly being incorporated into residential, commercial, and public spaces to create environments that reflect cultural heritage while meeting modern aesthetic and functional demands. For instance, the Shanxi Museum has integrated traditional mural materials into its interior decoration, as illustrated in Figure 7 and Figure 8, to evoke a sense of historical continuity and cultural identity. Similarly, the Palace Museum in Beijing has employed mineral pigments to reproduce ancient palace murals, thereby enhancing the historical and cultural ambiance of its exhibits (Chang, 2022). These examples demonstrate the enduring relevance of traditional mural materials in modern architectural contexts, bridging the gap between past and present.



**Figure 7: Mural decoration inside contemporary buildings of Shanxi Museum (Source: Author shooting)**



**Figure 8: Mural decoration inside contemporary buildings of Shanxi Museum (Source: Author shooting)**

Traditional Chinese mural production methods are not only culturally significant but also environmentally friendly and cost-effective, making them particularly suitable for innovative applications in contemporary settings. The use of natural materials such as mineral pigments, plant-based binders, and locally sourced clay and fibers aligns with the principles of sustainable design, which prioritize resource efficiency and environmental stewardship (Zhao, 2006). However, the application of traditional mural materials is often limited to interior decoration due to their susceptibility to environmental factors such as moisture, temperature fluctuations, and ultraviolet radiation. This limitation has prompted scholars and artists to explore the integration of modern technology and material science to expand the possibilities of traditional mural materials and adapt them to a wider range of architectural contexts.

#### 3.1 Innovations in Material Science and Technology

Recent advancements in material science and technology have opened new avenues for the application of traditional mural materials in modern architectural wall decoration. For example, a research team at the China Academy of Art has developed environmentally friendly pigments and binders that combine the aesthetic qualities of traditional materials with the durability and versatility required for contemporary use. These innovations enable the creation and restoration of murals that are not only visually authentic but also resistant to environmental degradation (Huang, 2017). Similarly, researchers at Tsinghua University have explored the use of natural plant dyes, such as indigo and yellow dock, as sustainable alternatives to synthetic pigments.

These plant-based dyes offer a rich palette of colors while maintaining the ecological integrity of the mural production process (Zheng, 2014).

The integration of modern materials with traditional techniques has also facilitated the development of new decorative methods for building exteriors. For instance, the use of advanced protective coatings and sealants can enhance the durability of traditional mural materials, making them suitable for outdoor applications. Additionally, the incorporation of digital design tools and printing technologies allows for the precise replication of traditional mural patterns and motifs on a variety of surfaces, including glass, metal, and composite materials. These innovations enable architects and designers to create visually striking and culturally resonant facades that reflect the principles of traditional Chinese mural art while meeting the functional requirements of modern architecture (Mario, 2012).

### **3.2 Case Studies of Modern Applications**

The application of traditional mural materials in modern architectural wall decoration is exemplified by several high-profile projects in China. One notable example is the interior decoration of the Shanxi Museum, where traditional mural techniques and materials have been used to create a cohesive and immersive cultural experience. As shown in Figure 7, the museum's walls feature intricate designs rendered in mineral pigments and natural binders, evoking the aesthetic and spiritual qualities of ancient Chinese murals. This approach not only enhances the museum's architectural identity but also reinforces its role as a custodian of cultural heritage (Chang, 2022).

Another significant example is the restoration and reproduction of murals at the Palace Museum in Beijing. By employing traditional mineral pigments and techniques, conservators have been able to recreate the vibrant colors and intricate details of ancient palace murals, thereby preserving their historical and artistic value. These reproductions are displayed in the museum's galleries, where they serve as both educational tools and sources of aesthetic inspiration. The success of these projects highlights the potential of traditional mural materials to enrich modern architectural spaces while fostering a deeper appreciation for China's cultural heritage (Shi, 2021).

### **3.3 Challenges and Opportunities**

Despite the promising developments in the application of traditional mural materials, several challenges remain. One of the primary challenges is the scarcity of skilled artisans who possess the knowledge and expertise required to produce and apply traditional materials. The decline of traditional apprenticeship systems and the lack of formal training programs have contributed to a shortage of qualified practitioners, threatening the continuity of this ancient art form (Zhang, 2020). To address this issue, there is a need for increased investment in education and training programs that combine traditional techniques with modern technologies.

Another challenge is the need to balance authenticity with innovation. While the integration of modern materials and technologies can enhance the durability and versatility of traditional murals, it is essential to ensure that these innovations do not compromise the aesthetic and cultural integrity of the original art form. This requires a collaborative approach that involves artists, conservators, architects, and material scientists working together to develop solutions that respect and preserve the essence of traditional mural art (Zhang, 2024).

### **3.4 Future Directions**

The application of traditional Chinese mural materials in modern architectural wall decoration offers significant opportunities for the preservation and revitalization of cultural heritage. By combining traditional techniques with modern innovations, it is possible to create architectural spaces that are both aesthetically compelling and culturally meaningful. Future research should focus on the development of new materials and technologies that enhance the durability and adaptability of traditional mural materials while maintaining their ecological and cultural value. Additionally, efforts should be made to promote public awareness and appreciation of traditional mural art, fostering a sense of cultural identity and pride.

In conclusion, the integration of traditional Chinese mural materials into modern architectural wall decoration represents a powerful means of connecting the past with the present. Through innovative applications and collaborative efforts, it is possible to ensure the continued relevance and vitality of this ancient art form in contemporary society. By doing so, we can create architectural spaces that not only reflect the richness of China's cultural heritage but also inspire future generations to appreciate and preserve it.

## **4. Decorative Characteristics of Contemporary Chinese Comprehensive Material Painting Derived from Mural Art**

Contemporary Chinese comprehensive material painting, deeply rooted in the rich tradition of mural art, represents a unique fusion of historical aesthetics and modern artistic expression. This art form, which emerged as a response to the evolving demands of architectural and interior decoration, draws heavily from the techniques, materials, and symbolic language of traditional Chinese murals. By integrating these elements with modern materials and innovative approaches, contemporary artists have created a distinctive decorative style that bridges the past and present. This section explores the decorative characteristics of contemporary Chinese comprehensive material painting, focusing on its material diversity, cultural symbolism, spatial adaptability, and aesthetic harmony.

### **4.1 Material Diversity and Innovation**

One of the most striking features of contemporary Chinese comprehensive material painting is its extensive use of diverse materials, a characteristic inherited from traditional mural art. Traditional murals often employed natural materials such as mineral pigments, clay, plant fibers, and organic binders, which were chosen for their durability, texture, and symbolic significance. In contemporary practice, artists have expanded this material palette to include modern synthetic materials, metals, textiles, and even digital elements. This material diversity not only enhances the visual and tactile richness of the artwork but also allows for greater experimentation and innovation in texture, color, and form (Chang, 2022).

For instance, the incorporation of metallic foils or acrylic resins into traditional mineral pigments creates a dynamic interplay of light and texture, adding a modern dimension to the artwork while preserving its cultural essence. Similarly, the use of digital printing techniques enables the replication of intricate mural patterns on unconventional surfaces such as glass or composite panels, making the art form more adaptable to contemporary architectural designs (Mario, 2012). This blending of traditional and modern materials reflects a broader trend in Chinese art, where the past is reinterpreted through the lens of the present.



## 4.2 Cultural Symbolism and Narrative Depth

Another defining characteristic of contemporary Chinese comprehensive material painting is its emphasis on cultural symbolism and narrative depth, a legacy of traditional mural art. Traditional murals often served as visual narratives, depicting historical events, religious stories, or philosophical concepts through symbolic imagery and intricate compositions. Contemporary artists have adopted this narrative approach, using symbolic motifs and cultural references to create artworks that resonate with both local and global audiences.

For example, the use of lotus flowers, dragons, or phoenixes in contemporary works evokes traditional Chinese cultural values such as purity, power, and renewal. At the same time, these symbols are often recontextualized to address modern themes such as environmental sustainability, social justice, or technological advancement. This dual-layered approach allows the artwork to function as both a decorative element and a medium for cultural expression, enriching the spatial experience of modern architectural environments (Chang, 2022).

## 4.3 Spatial Adaptability and Integration

The adaptability of contemporary Chinese comprehensive material painting to various architectural spaces is another key decorative characteristic. Traditional murals were often site-specific, designed to harmonize with the architectural features and functional requirements of the spaces they adorned. Contemporary artists have retained this site-specific approach while expanding the scope of their work to include a wider range of environments, from residential interiors to public spaces and urban landscapes.

For instance, large-scale murals in public buildings or urban plazas often incorporate modular designs that can be adapted to different spatial configurations. This flexibility allows the artwork to interact dynamically with its surroundings, creating a cohesive visual narrative that enhances the architectural experience. Additionally, the use of lightweight and durable materials enables the installation of murals in unconventional spaces such as curved walls, ceilings, or outdoor facades, further expanding their decorative potential (Zhang, 2024).

## 4.4 Aesthetic Harmony and Visual Impact

Aesthetic harmony is a central principle of both traditional and contemporary Chinese mural art, reflecting the Confucian ideal of balance and unity. In contemporary comprehensive material painting, this principle is expressed through the careful integration of color, texture, and composition to create visually cohesive and impactful artworks. The use of traditional color schemes, such as the harmonious combination of red, gold, and black, is often juxtaposed with modern geometric patterns or abstract forms, resulting in a balanced interplay of tradition and innovation.

The visual impact of these artworks is further enhanced by their scale and placement within architectural spaces. Large, immersive murals can transform ordinary spaces into extraordinary environments, evoking a sense of awe and cultural connection. At the same time, smaller, more intimate works can serve as focal points that draw attention to specific architectural features or functional areas. This versatility makes contemporary Chinese comprehensive material painting a powerful tool for enhancing the aesthetic and cultural value of modern architectural designs (Yu, 2020).

## 4.5 Challenges and Future Directions

Despite its many strengths, the integration of traditional mural art into contemporary comprehensive material painting faces several challenges. These include the scarcity of skilled

artisans, the need for sustainable material practices, and the balancing of cultural authenticity with modern innovation. Addressing these challenges requires a collaborative approach that involves artists, architects, material scientists, and cultural policymakers.

Future directions for this art form may include the development of eco-friendly materials, the incorporation of digital technologies such as augmented reality, and the creation of interdisciplinary programs that promote the study and practice of traditional mural techniques. By embracing these innovations, contemporary Chinese comprehensive material painting can continue to evolve as a dynamic and culturally significant art form, enriching the decorative landscape of modern architecture.

The decorative characteristics of contemporary Chinese comprehensive material painting, derived from the rich tradition of mural art, reflect a unique blend of historical aesthetics and modern innovation. Through material diversity, cultural symbolism, spatial adaptability, and aesthetic harmony, this art form has established itself as a powerful medium for architectural decoration and cultural expression. By addressing current challenges and exploring new possibilities, it can continue to play a vital role in the preservation and evolution of Chinese artistic heritage in the context of global architectural trends.

## 5. Discussion

The integration of traditional Chinese mural materials into contemporary architectural wall decoration represents a unique intersection of cultural heritage and modern design. This approach not only preserves the aesthetic and historical significance of traditional murals but also adapts them to meet the functional and environmental demands of modern architecture. The following sections explore the unique advantages of traditional Chinese mural materials, their long-lasting and stable pigments, their international relevance, and the challenges and solutions for protecting decorative murals on building walls.

### 5.1 Unique Advantages of Traditional Chinese Mural Materials in Contemporary Architectural Wall Decoration

Traditional Chinese mural materials offer several distinct advantages that make them highly suitable for contemporary architectural wall decoration. These advantages include their seamless integration with building walls, economic cost-effectiveness, and environmental performance.

**Integration with Building Walls:** One of the most significant advantages of traditional Chinese mural materials is their ability to integrate seamlessly with building walls. The base layer materials, which typically consist of a mixture of clay, sand, and plant fibers, are applied directly to the wall surface, creating a strong bond that ensures long-term preservation. This integration not only enhances the structural integrity of the mural but also allows it to withstand environmental stresses such as temperature fluctuations and humidity (Lian, 2023). The use of locally sourced materials further ensures compatibility with the local climate and building techniques, reducing the risk of material degradation over time.

**Economic Cost:** Traditional Chinese mural materials are economically advantageous due to their local availability and affordability. The use of locally sourced materials such as soil, sand, and plant fibers minimizes transportation costs and reduces the overall expense of mural production. Additionally, the simplicity of the materials and techniques involved in traditional mural painting allows for cost-effective labor, making it an attractive option for large-scale

architectural projects (Zhang, 2024). This cost-effectiveness is particularly important in developing regions where budget constraints may limit the use of more expensive modern materials.

**Environmental Performance:** The environmental performance of traditional Chinese mural materials is another key advantage. These materials are predominantly natural and biodegradable, making them environmentally friendly and sustainable. The use of mineral pigments, plant-based binders, and organic fibers reduces the environmental impact associated with the production and disposal of synthetic materials. Furthermore, the application of traditional materials aligns with the principles of green architecture, which emphasize the use of sustainable and non-toxic materials in building design (Huang, 2017).

An innovative step in the application of traditional mural materials is the use of a transparent waterproof coating after painting, as shown in Figure 9 and Figure 10. This coating forms a protective film over the mural, preventing moisture penetration and environmental damage. Field tests have demonstrated that murals treated with this coating exhibit excellent color retention and protection even after six months of exposure to the elements. This innovation not only enhances the durability of traditional murals but also expands their potential for use in exterior architectural applications (Zhang, 2024).



**Figure 9: Mural painting actual photo**  
Source: The researcher



**Figure 10: Mural painting actual photo**  
Source: The researcher

## 5.2 Long-lasting and Stable Pigments of Traditional Chinese Murals

The pigments used in traditional Chinese murals are primarily derived from natural minerals, which are known for their long-lasting and stable properties. These pigments provide high-quality color materials for architectural wall decorations, offering a level of durability and aesthetic appeal that is difficult to achieve with synthetic alternatives.

**Mineral Pigments:** Mineral pigments, such as cinnabar (red), azurite (blue), and malachite (green), have been used in traditional Chinese murals for centuries due to their vibrant colors and resistance to fading. These pigments are chemically stable and do not react with environmental factors such as light, humidity, or temperature, ensuring that the colors remain vivid and unchanged over time (Zhao, 2006). The use of mineral pigments in contemporary architectural wall decoration not only preserves the traditional aesthetic but also provides a durable and low-maintenance solution for modern buildings.

**Balancing Tradition and Innovation:** While chemical pigments are prevalent in modern art and design, traditional mineral pigments offer a unique combination of elegance and durability that is difficult to replicate. However, the integration of traditional and modern materials is essential for achieving a balance between aesthetic authenticity and technological advancement. For example, the use of modern binders and protective coatings can enhance the

performance of traditional pigments without compromising their visual qualities. This approach allows for the creation of murals that are both historically resonant and functionally robust (Shi, 2021).

### 5.3 Uniqueness of Mural Art from an International Perspective

Mural art is a global phenomenon that transcends cultural and geographical boundaries, carrying an inherent international flavor. Whether it is the traditional Chinese frescoes, the European wet frescoes, or the decorative frescoes found in Africa and the Americas, murals have been used to enhance buildings and convey cultural narratives across the world. This universality makes mural art a powerful medium for public art in contemporary architecture.

**Global Influence and Acceptance:** The global influence of mural art is evident in its widespread acceptance and adaptation across different cultures. For instance, the murals of the Art Museum of the Sichuan Fine Arts Institute in China (Figure 11) showcase the integration of traditional Chinese techniques with modern artistic expressions, creating a unique visual language that resonates with both local and international audiences. Similarly, the exterior decorations of urban buildings in Malaysia (Figure 12 and Figure 13) demonstrate the adaptability of mural art to different architectural styles and cultural contexts (Zhang, 2024).



Figure 11: Mural of Art Museum of Sichuan Fine Arts Institute of China  
Source: The researcher



Figure 12: Exterior decoration of urban buildings in Malaysia  
Source: The researcher



Figure 13: Exterior decoration of urban buildings in Malaysia  
Source: The researcher

**Interior and Exterior Decorative Designs:** Contemporary architecture should focus on both interior and exterior decorative designs, with murals playing a significant role in enhancing the



aesthetic and cultural value of buildings. Interior murals can create immersive environments that reflect the cultural identity of the space, while exterior murals can serve as public art installations that engage the community and enhance the urban landscape. The versatility of mural art makes it an ideal medium for achieving these objectives, as it can be adapted to a wide range of architectural styles and functional requirements (Chang, 2022).

#### 5.4 Protecting Decorative Murals on Building Walls

Protecting murals on building exteriors is a significant challenge due to their exposure to weather conditions such as rain, wind, and ultraviolet radiation. However, the combination of traditional materials with modern scientific innovations offers effective solutions for preserving the integrity and aesthetic quality of decorative murals.

**Waterproof and Sunscreen Materials:** One of the most effective methods for protecting exterior murals is the application of waterproof and sunscreen materials. These materials form a protective barrier that shields the mural from moisture, UV radiation, and other environmental factors that can cause fading, cracking, and peeling. For example, the use of transparent waterproof coatings, as mentioned earlier, has proven to be highly effective in preserving the color and texture of traditional murals (Huang, 2017). Similarly, the incorporation of UV-resistant coatings can prevent the degradation of pigments caused by prolonged exposure to sunlight.

**Preserving Traditional Texture:** While modern protective materials are essential for ensuring the longevity of exterior murals, it is equally important to preserve the traditional texture and aesthetic qualities of the artwork. This can be achieved through the careful selection of materials and techniques that enhance the durability of the mural without altering its visual characteristics. For instance, the use of nano-coatings and other advanced materials can provide robust protection while maintaining the natural appearance of traditional pigments and binders (Zhang, 2024).

The application of traditional Chinese mural materials in contemporary architectural wall decoration offers a unique opportunity to preserve cultural heritage while meeting the demands of modern design. The integration of these materials with modern technologies and protective solutions ensures their durability and adaptability, making them suitable for a wide range of architectural applications. By balancing tradition and innovation, it is possible to create murals that are not only aesthetically compelling but also environmentally sustainable and culturally significant. As the global appreciation for mural art continues to grow, the preservation and revitalization of traditional techniques will play a crucial role in shaping the future of architectural decoration.

## 6. Conclusion

This study offers a comprehensive analysis of the production processes, materials, and techniques involved in traditional Chinese mural painting, emphasizing their procedural complexity and the challenges they pose for conservation and development. Traditional mural materials, known for their cultural and aesthetic significance, have found renewed relevance in contemporary architectural wall decoration. By integrating modern innovations such as waterproof coatings, this research demonstrates how traditional murals can be effectively preserved and adapted for outdoor applications, addressing issues of durability and environmental exposure. Furthermore, the study underscores the importance of retaining the unique texture and artistic qualities of traditional murals while exploring their potential in

contemporary decorative art. This approach not only enhances the artistic value of modern architectural spaces but also fosters the sustainable inheritance and innovative evolution of traditional Chinese mural art. By bridging the gap between historical craftsmanship and modern design, this research contributes to the broader appreciation and preservation of China's rich cultural heritage in the context of global architectural trends.

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