Original Research Article

# The multi-faceted integration and expression of modern architectural vocabulary in traditional villages in Minnan region under the perspective of symbiosis theory

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***Abstract:*** Traditional villages are excellent representatives of traditional culture and new hotspots for modern rural tourism. The Minnan region, backed by mountains and facing the sea, has been deeply influenced by Central Plain culture and maritime culture. Villages in the Minnan region exhibit diverse characteristics, with the most distinctive architectural feature being the red brick walls and swallow-tail ridges. With the acceleration of urbanization, some traditional Minnan villages have suffered damage, and the architectural art of some traditional Minnan villages is gradually disappearing. This paper aims to integrate modern architectural concepts and techniques into the architectural art of Minnan villages and use symbiosis theory to protect and inherit this architectural art, ensuring the preservation of traditional Minnan villages and showcasing their unique architectural beauty.

***Keywords:*** Symbiosis theory; Minnan region; Traditional village; Architectural art

Traditional architecture carries peoples nostalgia and regional characteristics, such as the gardens of Suzhou, the siheyuan courtyards in Beijing, and the bamboo houses of the Dai people. Traditional villages in southern Fujian integrate maritime culture and Central Plains architectural art. When designing, it is essential to preserve regional features and folk culture while incorporating modern architectural trends to achieve a harmonious coexistence of tradition and modernity. The design should focus on spatial, formal, material, and spiritual coexistence, transforming traditional villages in southern Fujian into new cultural symbols to promote local tourism and cultural industry development.

## 1. Concept of symbiosis theory and its application in architecture

(1) Concept of symbiosis theory

In 1979, Japanese architect Kisho Kurokawa formally put forward the concept of “symbiosis” at an international conference and advocated integrating symbiosis into architecture. He published “New Symbiosis”, which combined his architectural cases such as the National Museum of Ethnology, The Modern Art Museum of Hiroshima City, Melbourne Center in Australia, and the new International Airport in Kuala Lumpur to illustrate the theory of symbiosis[1]Kisho Kurokawa divides the idea of symbiosis into the symbiosis of heterogeneous cultures, the reconciliation of humans and technology, the unity of parts and whole, the integration of inside and outside, the coexistence of history and modernity, and the continuity of nature and architecture. He combines Japanese national culture with Western modern culture, designs based on local natural conditions, and highlights regional architectural culture[2]。

(2) The application of symbiosis theory in architecture

## 2. The symbiosis between architecture and environment

Architecture is a product of human wisdom and an expression of humanitys transformation of nature. In the process of architectural design, we can skillfully utilize natural environments. For example, using walls and glass for partitions to transform the natural environment into a backyard garden, employing artificial hills and flowing water to beautify the building surroundings, and utilizing natural scenery for decoration. Japanese architecture excels in the use of wood; wooden structures are a significant feature of Japanese buildings. They employ timber for load-bearing construction and use wooden screens, latticed windows, and curtains to divide indoor and outdoor spaces, embodying the architectural art of "harmony between heaven and man."[2]As shown in **Figure 1**, Nagoya Museum of Art embodies the concept of symbiosis. The lobby is separated by glass curtain wall, and visitors can see the scenery outside the garden through the glass, which cleverly uses indoor and outdoor space.

**Figure 1. Nagoya Museum of Art (designed by Kisho Kurokawa).**

## 3. Cultural symbiosis

Globalization promotes cultural exchange, and urban architecture showcases diverse characteristics. Under the influence of Western architectural civilization, traditional building culture has been overlooked. Modern urban architecture should integrate traditional and contemporary cultures; architects need to deeply understand local architecture and ethnic culture to create new styles. For example, Wang Shu combines traditional materials with Jiangnan characteristics, demonstrating the fusion of traditional and modern architecture.

## 4. Construction technology and human coexistence

Architecture is closely linked to life, and the development of craftsmanship has diversified materials and techniques. Designers integrate modern technology, art, and lifestyle, such as in Pianos design of the Chubbau Cultural Center, which combines traditional tribal characteristics with contemporary architectural art. By using design software, he transforms tribal culture into modern design, reflecting the symbiosis of architectural techniques and human culture.

## 5. Traditional village architecture layout and artistic image in southern Fujian

(1) Characteristics of courtyard layout in traditional villages of southern Fujian

The Minnan residential buildings are primarily based on the three-sided courtyard or four-sided courtyard units, with different names for their floor plans. The main house has three bays, known as "three-bay layout,"

while five bays are called “five-bay layout.” The layout feature is “bright hall, dark rooms.” Courtyards are divided into five types based on depth: from “one entry” to “five entries.” The functions of the houses are clear, with compact spatial layouts that are highly practical. Minnan residential buildings often cluster together, mainly constructed with brick, stone, and wood, with a plan shaped like the character “mouth.” Three-sided courtyards are also common, with a plan resembling the character “concave,” featuring a central courtyard and side rooms called “ju tou,” forming a typical architectural style.

**Figure 2. Traditional Minnan residential courtyard.**

(2) Unique red brick culture

The most distinctive feature of Minnan dwellings is the ingenious combination of stone and red bricks. First, stone slabs are used to build a base that reaches chest height, then red bricks are laid on top. The vivid red color symbolizes the warmth and hope for life among the people of Minnan. The front facades of Minnan dwellings are particularly elegant, with the contrast between the red bricks and gray-green stones being striking. As shown in **Figure 3**, skilled craftsmen also use red bricks in floral patterns and carve birds, flowers, fish, insects, or various auspicious motifs on the wall stones. Therefore, Minnan architecture is also known as “Red Brick Culture.” Minnan dwellings use stone and tile in floral arrangements to construct walls, with mountain flowers and entrance areas clad in red bricks, creating a strong personality. They employ the unique orange-red facing bricks and tiles characteristic of the Minnan region to build their houses[3]In the production of red bricks in Quanzhou, a special stacking method is adopted to form unique patterns. Craftsmen will use these marks to decorate when laying tiles. Red bricks and tiles present unique curves, which are conducive to rain water sliding down and are more suitable for the rainy climate in southern Fujian.

**Figure 3. Red brick mosaic wall.**

(3) The graceful swallow-tail ridge

Most Minnan red brick residences are constructed with brick, wood, and stone. The roof ridges are typically tall, with an arc resembling a spine, rising sharply at both ends and soaring into the air. The tail end tapers and forks like a swallows tail, earning them the name “swallow-tail ridge” (**Figure 4**). This is the most distinctive feature of ancient Minnan houses. The main ridge is lower in the middle and higher at the ends, with beautiful swallow-tails at the tips, reflecting the inheritance of Central Plain architectural culture in Minnan dwellings. This architectural style conveys a sense of lightness, agility, and flight, embodying the spirit of Minnan people who dare to explore and innovate. Minnan residents also decorate the swallow-tail ridges with various cloud patterns and mythical creatures, such as bats, dragon arches, and lion heads. Commonly used auspicious cloud patterns adorn the swallow-tail ridges in ordinary residences, while wealthy families use mythical creatures to protect their homes, and temples feature colorful tiles to decorate the swallow-tail ridges[4]。

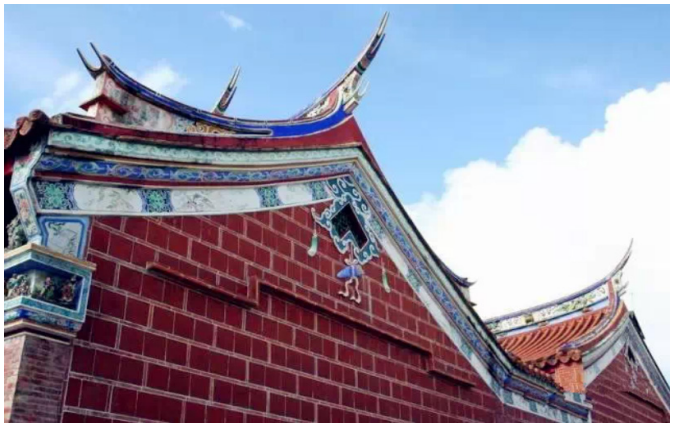

**Figure 4. Swallowtail spine.**

Third, the significance of studying the architectural art of traditional villages in Minnan from the perspective of symbiosis theory

(1) Promoting social development

The theory of symbiosis has gained increasing attention in the field of architecture, gradually influencing various aspects of human life. A deep analysis of traditional Minnan village architectural art reveals the importance of the symbiosis theory for social development. It not only affects interpersonal relationships but may also serve as a model for coexistence between nations, extending to multiple dimensions such as economics and culture. The theory of symbiosis is key to promoting social development and achieving harmonious coexistence among diverse entities.

(2) Protecting traditional villages in southern Fujian

Symbiosis theory is the core of protecting traditional villages in southern Fujian. In the process of village development, symbiosis theory helps to maintain cultural characteristics and architectural styles while updating construction, realize the harmonious unity of tradition and modernity, and protect the architectural culture of traditional villages.

(3) Promoting the integration of diverse cultures

Symbiosis theory promotes the integration and coexistence of different fields such as art, culture, and economy, fostering harmony between humans and nature, as well as between art and science. Applying symbiosis theory to traditional village architectural design is a core method for addressing protection and development

issues, and it can also be used to resolve cultural conflicts, achieving harmonious unity among different cultural attributes.

## 6. Expression methods of modern architecture in traditional villages in Minnan under the theory of symbiosis

(1) The ingenious translation of spatial sequence

Under the guidance of symbiosis theory, the expression of modern architecture in traditional villages in southern Fujian should first achieve symbiosis with traditional buildings from the aspect of space, so it is necessary to find the common points between the two, and take this as a necessary condition to achieve spatial matching and evolution while maintaining the personality and activities of both sides, so as to form a progressive interpretation effect.

First, it is essential to enhance the shaping of spiritual spaces, maintaining spatial familiarity and perceptual effects. Taking traditional Minnan architecture as an example, courtyards serve as crucial spaces that are both inwardly enclosed and semi-private, reflecting the influence of clan systems on architectural styles. For instance, the ancestral hall in Yangxia Village, Yunxiao County, centers around a courtyard, embodying the value of spatial layout and spiritual coexistence. Modern architecture can draw inspiration from this model, using courtyards as the core to achieve a translation of spiritual coexistence. Second, it is necessary to strengthen the creation of social interaction spaces. In traditional Minnan villages, the boundaries between architectural spaces are blurred, and the use of translucent materials promotes coexistence between buildings and nature, as well as among people. Modern architecture should continue this design approach, utilizing translucent materials to refine spatial expression and achieve the goal of spatial and spiritual coexistence.

(2) The evolution of architectural style

The symbiosis theory advocates coexistence rather than assimilation, and emphasizes the embodiment of cultural symbols of traditional village architecture in modern architecture, and the combination of tradition and change through new materials and design.

Taking Minnan architecture as an example, modern buildings should retain traditional elements such as sloping roofs and swallow-tail ridges, while simplifying the roof ridge design to adapt to contemporary aesthetics. Additionally, traditional architectural features like red roofs and red bricks can be integrated into modern designs through simplification or abstraction, preserving regional characteristics while showcasing evolution.

**Figure 6. Simplified sloping roof 1.**

**Figure 7. Simplified sloping roof 2.**

(3) Innovation and substitution of traditional materials

Building materials are the direct factors that affect the expression of architecture. Traditional villages in southern Fujian generally adopt local building materials and use localized construction methods to implement construction. Under the guidance of the theory of material symbiosis, the expression of modern architecture should be upgraded and optimized from the imitation, innovation and substitution of traditional materials.

Traditional Minnan village architecture primarily uses stone, brick, and tile as basic materials, whereas modern buildings predominantly employ concrete, glass, and metal. However, these materials are not entirely unrelated. For instance, tiles can be represented through steel plates, new types of tiles, and combinations of glass and metal, achieving similar forms and effects, even changing colors to convey a modern feel. Similarly, stone materials used in traditional buildings can be replaced with concrete, stone-like panels, or stone-like coatings, which not only reduce the weight of the material but also enhance its texture and appearance[5]。

(4) Use local characteristic materials

In order to reproduce traditional architectural culture, it is necessary to master the application and reconstruction of local materials, combine modern design, realize the synchronous construction of material and form, arouse emotional resonance, and show modern artistic style.

For example, architect Wang Shu explores the combination of traditional materials such as bricks, tiles, and wood with modern materials to create a unique architectural charm. In the Wencun project, he extensively uses traditional materials like earth, wood, and stone. This not only echoes traditional architecture but also achieves a reconfiguration and reuse of these materials, demonstrating respect for traditional culture and an innovative spirit. It showcases a harmonious and integrated architectural expression.

## 7. Conclusion

Symbiosis theory is a key concept in modern architectural design, particularly crucial for the protection and development of traditional Minnan village architecture. It not only promotes the inheritance of traditional building culture but also guides contemporary buildings to coexist harmoniously with tradition in terms of space, form, material, and spirit. This approach ensures that modern architecture retains traditional elements while integrating new design concepts and cultural symbols, achieving a harmonious coexistence between traditional and modern architecture.

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