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THE USE OF TRADITIONAL BRICK CARVING ELEMENTS IN MODERN DESIGN

The article is dedicated to the study of traditional residential brick carving in Chinese architecture, which is an important element of the decoration of ancient houses, temples, and ancestral halls. Brick carvings not only serve a decorative function but also carry deep symbolic meaning, reflecting religious beliefs, values, and aesthetic ideals traditional to China.

The study analyzes the primary materials used for carving and the main techniques for creating carved images. It explores key elements and symbolism of traditional ornaments, including mythological creatures, plant and animal motifs, scenes from daily life, and philosophical symbols. Special attention is given to compositions such as «dragon and phoenix,» «two dragons playing with a pearl,» the swastika as a Buddhist symbol of prosperity, as well as the combination of plant and animal elements that emphasize the concept of harmony and prosperity.

The article examines architectural elements adorned with brick carvings, considering different types of windows, including mosaic, swastika-shaped, and figurative designs, which combine functionality with symbolic meaning. It analyzes the placement of carvings on roofs, gates, shadow walls, and memorial archways, as well as their role in shaping the visual and spatial composition of buildings.

The article highlights the significance of traditional brick carving as an essential part of China's cultural heritage. These architectural elements not only preserve the nation's cultural code but also continue to play an important role in maintaining and transmitting traditional concepts of harmony, well-being, and spiritual balance. The study also explores examples of the modern application of traditional ornamentation and brick carving in contemporary interiors designed in the classical Chinese style.

Key words: traditional brick carving, Chinese traditional ornaments, ornamental elements, modern design.

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ВИКОРИСТАННЯ ТРАДИЦІЙНИХ ЕЛЕМЕНТІВ РІЗЬБИ ПО ЦЕГЛІ В СУЧАСНОМУ ДИЗАЙНІ

Стаття присвячена дослідженню традиційного житлового цегляного різьблення в китайській архітектурі, що є важливим елементом оформлення старовинних будинків, храмів і родових залів. Цегляні різьблення не лише виконують декоративну функцію, але й несуть глибокий символічний зміст, відображаючи релігійні вірування, цінності та естетичні ідеали, що традиційні для Китаю.

У роботі проаналізовано основні матеріали, що використовувались для різьблення та основні техніки створення різьблених зображень. Досліджено основні елементи та символіку традиційних орнаментів, які включають міфологічні істоти, рослинні й тваринні мотиви, сцени з повсякденного життя та філософські символи. Особлива увага приділяється композиціям «дракон і фенікс», «два дракони, що граються з перлиною», свастиці як буддистському символу благополуччя, а також поєднанню рослинних та тваринних елементів, які підкреслюють концепцію гармонії та процвітання.

В статті приділена увага архітектурним елементам, прикрашеним цегляним різьбленням. Розглядаються різні види вікон, серед яких мозаїчні, свастикоподібні та фігурні, що поєднують функціональність із символічним значенням. Аналізується розташування різьблення на дахах, воротах, тінювих стінах та меморіальних арках, а також його роль у формуванні візуальної та просторової композиції будівлі.

Стаття підкреслює значення традиційного цегляного різьблення як важливої складової китайської культурної спадщини. Ці архітектурні елементи не тільки зберігають культурний код нації, але й продовжують відігравати важливу роль у збереженні та передачі традиційних уявлень про гармонію, добробут та духовний баланс. Проаналізовано приклади сучасного використання традиційних елементів орнаментів та техніки різьблення цегли у сучасних інтер'єрах в традиційному класичному китайському стилі.

Ключові слова: традиційне різьблення цегли, китайські традиційні орнаменти, орнаментальні елементи, сучасний дизайн.

Purpose. Investigate the main elements and technological features of traditional brick carving in China using cultural heritage as an example. Analyze examples of the use of traditional brick carving techniques and ornaments in modern interior design.

Methodology. The research methodology is based on a comprehensive analysis of traditional Chinese brick carving through the study of cultural heritage and modern interior solutions. Analytical methods were applied to examine the main elements and symbolism of brick carving. Visual analysis allowed for the assessment of the aesthetic features of ornaments and compositions, while content analysis of literary and graphic sources helped systematize information on brick processing technologies. The practical aspect of the study included an analysis of specific examples of the use of traditional carvings in modern interior design.

The scientific novelty. The scientific novelty of the research lies in the comprehensive analysis of traditional residential brick carving in China as an important element of heritage. The materials, techniques, and ornamental motifs used in carving have been systematized. The study identifies the features of carving placement and the elements traditionally used.

Analysis of previous researches. In modern interior design, elements of traditional crafts are actively used to create unique spaces with historical and cultural context. According to the research of Margolin V. (Margolin, 2002: 126), traditional artistic techniques, such as wood carving, textile ornaments, and ceramics, are gradually finding new life in contemporary interiors, fostering harmony between the past and present. This is confirmed in the works of Heskett J. (Heskett, 2002: 11), who examines the integration of traditional crafts into mass production of interior objects, promoting their wider use. He emphasizes the importance of preserving original techniques, even when adapting them to modern needs. Brick carv-

ing holds an important place in Chinese architectural decor and has long been used for decorating residential buildings. Lian, B., Din, S. C., & Li, W. (Lian, Din & Li, 2024: 123) dedicated their research to analyzing and systematizing the types and colors of animal images created using the Han Dynasty brick carving technique.

The authors (Zihao, Muhizam, 2023) studied the technologies and elements of Huizhou carving, which is a part of decorative craftsmanship with a long history. Although production processes vary significantly, all of them have a strong regional identity in Huizhou. The artistic value of Huizhou's three types of carving is reflected not only in their function as decorative parts of Hui-style architecture's doors and windows but also in their independent existence as works of art. Despite the complexity of the production process, these carvings should be regarded as crafts that showcase regional decorative mastery.

Yaru Wang (Yaru, 2022), in his work, explores the symbolic significance of decorative brick carving in Shanxi merchant houses. The author notes that traditional elements play a crucial role in contemporary culture.

Problem statement. The research problem lies in the need to preserve and study traditional residential brick carving in China as an important element of art and decorative heritage. Despite its high artistic and cultural value, modern urbanization and standardization lead to the loss of unique decorative techniques and ornamental motifs. It is essential not only to explore traditional materials, techniques, and symbolism of carvings but also to determine their place in contemporary interior spaces. Analyzing the possibilities of integrating traditional ornaments into modern interior and exterior design is relevant, as it will contribute to preserving cultural identity and promoting historical artistic traditions.

The results of the research and their discussion.

Traditional residential brick carvings are an important element of traditional Chinese architecture, especially in ancient houses, temples, and ancestral halls. They are used to decorate walls, roofs, gates, and arches, serving not only an aesthetic but also a symbolic function. These carvings often depict mythological creatures, natural motifs, scenes from daily life, or philosophical symbols that reflect the beliefs and cultural values of Chinese society.

Traditional residential brick carvings usually use green bricks as the primary material. Green bricks are fired from clay and then manually cooled with water. Their hardness, corrosion resistance, and oxidation resistance are significantly better than those of ordinary bricks and stones, which naturally extends their durability. The brick carvings made from them are not only elegant and simple in shape but can also withstand corrosion for centuries. The merchant families in Jinzhong, having a certain level of economic strength, were particularly selective in choosing materials for their ancestral hall brick carvings. Therefore, blue bricks, known for their quality and appearance, became the preferred choice.

Traditional carving methods are generally divided into two types: secondary processing carving after firing and direct carving. The former requires skilled brick carving techniques, producing delicate and vivid decorative patterns, while the latter reveals a rougher and more expressive aesthetic. In terms of carving techniques, traditional residential brick carving differs from brick carving in general residential courtyards. Direct carving offers greater artistic expressiveness, often presenting the entire image of the carved object to achieve a three-dimensional effect, enhancing the sense of space and depth.

For example, the Qiao Family Ancestral Hall in Dongguan Town, Qi County, Jinzhong, known for its rigorous family governance and advocacy of frugality, exhibits this characteristic in its brick carving art. The intricately carved «grape» brick motifs on the walls of the Qiao family estate are carved from a single block of brick and stone. The fruit particles appear full, and when viewed from different angles, they create a sense of depth. This not only conveys the meaning of a house full of descendants but also provides visitors with a visually captivating experience. Another example is the majestic «Heavenly King and General» brick sculpture above the entrance. This type of brick carving emphasizes grandeur, relying on the imposing presence of immortal generals to highlight the distinguished status of the Qiao family.

Furthermore, symmetry plays a crucial role in these carvings, often aiming for auspicious meanings through paired designs, ultimately offering spiritual enjoyment to the viewer. Firstly, brick carvings frequently appear in even-numbered arrangements, with single brick carvings being less common. The combination of the

dragon and phoenix is one of the most prevalent motifs. When the dragon—symbolizing the emperor, power, and majesty—is paired with the phoenix—representing the queen, wisdom, and nobility—the concept of harmony is maximized. Similarly, brick carvings featuring «Two Dragons Playing with a Pearl» and «Taoist Bagua» frequently appear in traditional dwellings, symbolizing the balance between heaven and earth, as well as the harmony of yin and yang.



Fig. 1. Brick carvings of Jinzhong ancestral hall:
a) The wall of the Chang Clan Ancestral Hall;
b) The Caojia Ancestral Hall of Beihui Village

Secondly, the combination of plants and animals is another common theme in traditional residential brick carvings. On one wall of the Chang Clan Ancestral Hall, a set of exquisite brick carvings (Fig. 1a) can be seen. In the middle of the left brick carving, a vase containing chrysanthemums and bamboo symbolizes resilience and restraint. Surrounding it are «grapes,» which represent prosperity and fertility, as well as a «ding» (a traditional Chinese cauldron), which signifies power and stability. The brick carving on the right features the motif «Magpie Welcomes Spring,» symbolizing hope and happiness. The three-dimensional depiction of lush plants, combined with the dynamic presence of magpies, perfectly captures the Confucian merchants' aesthetic ideals, blending movement and stillness in a harmonious composition.

As far as traditional residential buildings are concerned, the external contours of their brick carvings are mainly circular and square, which align with the ancient belief that «heaven is round, and earth is square.» Only through «harmony» can true understanding be achieved, while «locality» represents strict rules. The combination of these two concepts is concretely expressed through brick carvings, conveying the noble status of ancestral temple architecture and reflecting an atmosphere of strict family governance and unity.

The brick-carved doors and windows in traditional residential buildings exhibit a variety of stylistic forms. The mosaic brick-carved window is a representative type, with the central part arranged in an orderly pattern. The most common motifs include the «jade pot,» «longevity peach,» and «five directions.» Sturdy green bricks are often accompanied by symbolically meaningful inscriptions, creating a rich decorative rhythm and aesthetic appeal for family members.

The «swastika»-shaped brick-carved window is another commonly used design in folk ancestral halls in Jinzhong. The character 'swastika' originates from Sanskrit and symbolizes the gathering of auspiciousness and virtue. In Tibetan, it is called 'Yongzhong' and represents the handprint of Buddha. Carving a «swastika»-shaped brick pattern does not necessarily indicate that the owner is a devout Buddhist; rather, it expresses a longing for a prosperous and fulfilling life.

A brick-carved window (see Fig. 1b) in the Caojia Ancestral Hall of Beihui Village along the Silk Road is a typical example of a «swastika»-shaped brick carving. More importantly, the continuous spiral motion of the «swastika» symbol enhances the solemnity of the ancestral hall while adding a sense of lively and free-spirited beauty. This design also conveys the idea of an endless flow of words and abundant wealth.

In traditional dwellings, the most common places where brick carving art appears are the ridges, walls, and memorial archways. The brick carvings on the roof are generally small in size, with a large quantity and neatly arranged. On the roof of the Wang Family Ancestral Hall in Jingsheng Village, Lingshi County, there are two rows of «chrysanthemum»-shaped brick carvings (Fig. 2a) distributed above and below, enhancing the extension and three-dimensional sense of the streamlined roof ridge.

On the roof of the ancestral hall of an ordinary merchant's family in Yingxi Village, Zhukang Township, Pingyao County, there is a row of the most common «animal-shaped» brick carvings (Fig. 2b), aimed at conveying the beautiful hope of protecting the town's courtyard. The position and arrangement of the brick carvings at the top of the temple are also very particular. As the connecting part between the roof and the wall, it is also the most prominent position at the lintel of the ancestral hall. It generally follows the distribution principle of «small-large-small» and its upper and lower parts are often carved with small brick carvings, which are mostly decorative. In the middle position, larger brick carvings such as «flowers, birds, auspicious beasts, and literary allusions» are carved, but they do not overwhelm the composition due to excessive quantity and instead highlight the beautiful meaning conveyed by the middle brick carvings more clearly.

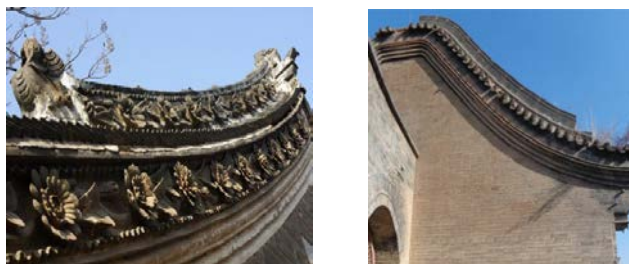


Fig. 2. The ridges, walls, and memorial archways
a) Chrysanthemum brick carvings on the roof of Wang; b) Ancestral hall in Zhukang

The brick carvings on the walls of ancestral halls tend to have a larger overall area and proportion, often forming a separate decorative effect. Common examples include shadow walls and brick carvings distributed on various walls. There is an ancient ancestral hall in Renyi Village, Nanguan Town, Lingshi County. Across from its entrance is a large brick carving on a shadow wall, which faces the main entrance of the temple and is separated by a distance, increasing the external space of the temple. At the same time, the brick carving can also cover the irregular scenery across from the ancestral hall, giving people a sense of regularity and beauty visually, increasing the construction space of the ancestral hall, and invisibly enhancing the solemn and dignified atmosphere of the ancestral hall. There are also many magnificent brick carvings distributed on the walls of the ancient Taoma ancestral hall. These brick carvings are generally used for decorative purposes, and their size is generally the same as the size of the windows on the walls, which is not discordant or abrupt in overall sensory perception.

The traditional brick carving art of residential buildings complements other decorative arts and natural scenery in terms of spatial location, possessing both the unique beauty of individual brick carvings and the overall beauty presented by their mutual combination. In the Chang Clan Ancestral Hall, the wooden hanging ornaments under the eaves of the hall are themed around "lotus" and "willow" (Fig. 3).



Fig. 3. The ancestral hall of Chang and its carving art in Yuci

Lotus symbolizes pure quality, while willow sounds like «stay», expressing grief for ancestors. There are two brick carved double bucket flagpoles in front of the gate of the ancestral hall (Fig. 3), with magnificent base decorations and skilled carving techniques, greatly enhancing the grandeur of the ancestral hall. Surrounded by a circle of stone railings, symbolizing a round sky and a square earth. The softness of wood carving, the hardness of brick carving, and the roughness of stone carving complement each other in decorative style, and are combined with the orderly ancestral hall architecture, making the Chang Clan Ancestral Hall majestic and solemn, dynamic and grand as a whole.

Traditional residential brick carvings uniquely embody the artistic style of classical Chinese beauty.

A detailed analysis of these carvings reveals not only the common elements: birds, beasts, and plant decorations but also frequently occurring family creed motifs. Unlike courtyard brick carvings, which emphasize simple elegance and luxury, residential brick carvings often carry specific symbolic meanings and persuasive intent, making them more aesthetically refined.

The analysis of modern interior design shows that traditional Chinese brick carving techniques and ornamental elements are actively used to create authentic and stylish spaces. They are applied in the decoration of walls, columns, arches, and decorative panels, adding depth, texture, and cultural significance to interiors. Ornamental motifs such as clouds, dragons, lotus flowers, and geometric patterns harmoniously fit into contemporary concepts of minimalism, eclecticism, and loft styles. The use of such elements allows for a fusion of traditional spirit with modern materials and technologies, creating a unique atmosphere in residential and commercial spaces.

Conclusions. Traditional residential brick carvings are an integral part of China's architectural heritage, combining aesthetic excellence with deep symbolic meaning. These carvings not only adorn buildings but also reflect the worldview, religious beliefs, and social values of Chinese society. The refinement of carving techniques, the selection of high-quality materials, and the craftsmanship involved demonstrate a high level of artistic skill, particularly among wealthy fam-

ilies who sought to emphasize their status through architectural elements.

A crucial aspect of traditional brick carving is adherence to the principles of harmony and symmetry. Patterns featuring mythological creatures, floral and animal motifs symbolize prosperity, family unity, longevity, and spiritual balance. Additionally, traditional compositions such as «dragon and phoenix,» «two dragons playing with a pearl,» or the Buddhist swastika symbol embody the concepts of harmony between heaven and earth, as well as the balance between masculine and feminine forces.

Particular attention should be given to the primary elements of brick carving widely used in traditional Chinese architecture. The most common include: brick windows, swastika-shaped windows, roof carvings (including chrysanthemum-like and zoomorphic motifs), tympanum carvings («small-large-small» compositions), featuring decorative arrangements of flowers, birds, mythical creatures, and literary theme, brick wall panels and shadow walls, which visually expand the space of temples and contribute to the harmonious appearance of the structure, brick flagpoles with double bases.

Overall, traditional brick carvings in residential architecture are not only a testament to the craftsmanship of ancient artisans but also bearers of profound symbolism and spiritual ideals. They preserve the cultural code of the nation, reflecting the continuity of traditions and the pursuit of harmony, making them an essential component of China's cultural heritage.

BIBLIOGRAPHY

1. Margolin V. *The Politics of the Artificial: Essays on Design and Design Studies*. – Chicago: University of Chicago Press, 2002. 268 p. DOI: <https://doi.org/10.7208/9780226518374>
2. Heskett J. *Toothpicks and Logos: Design in Everyday Life*. Oxford: Oxford University Press, 2002. 202 p. DOI: <https://doi.org/10.1093/oso/9780192803214.001.0001>.
3. Lian B., Din S. C., Li W. Inheriting History and Culture: The Significance of Auspicious Animal Brick Carving in Modern Cultural and Creative Design. *Herança*. 2024. №3. P. 120–133. DOI: <https://doi.org/10.52152/heranca.v7i3.838>.
4. Zihao Cao, Muhizam Bin M. A Study of ornamental craftsmanship in doors and windows of hui-style architecture: The Huizhou Three Carvings (Brick, Stone, and Wood Carvings). *Buildings*. 2023. №2, P. 351. DOI: <https://doi.org/10.3390/buildings13020351>.
5. Yaru Wang. Inheritance and aesthetic cognition analysis of brick carving art. *Symposium on Mental Health of Citizens in Pacific Rim Nations*, 2022, Vol. 34, Suppl. 5, P. 267–268.

REFERENCES

1. Margolin, V. (2002) *The Politics of the Artificial: Essays on Design and Design Studies*. University of Chicago Press. <https://doi.org/10.7208/9780226518374>
2. Heskett, J. (2002) *Toothpicks and Logos: Design in Everyday Life*. Oxford University Press, <https://doi.org/10.1093/oso/9780192803214.001.0001>
3. Lian, B., Din, S. C., & Li, W. (2024). Inheriting History and Culture: The Significance of Auspicious Animal Brick Carving in Modern Cultural and Creative Design. *Herança*, 7(3), 120–133. <https://doi.org/10.52152/heranca.v7i3.838>
4. Zihao Cao, Muhizam Bin M. (2023) A Study of Ornamental Craftsmanship in Doors and Windows of Hui-Style Architecture: The Huizhou Three Carvings (Brick, Stone, and Wood Carvings). *Buildings* 13(2), 351. <https://doi.org/10.3390/buildings13020351>
5. Yaru Wang (2022) Inheritance and aesthetic cognition analysis of brick carving art. *ABSTRACTS: Symposium on Mental Health of Citizens in Pacific Rim Nations*, 2022, 34(5).