Herança - History, Heritage and Culture Journal

2024, 7(3), 120-133 ISSN: 2184-3090

https://revistaheranca.com

Descriptice Research Article



Inheriting History and Culture: The Significance of Auspicious Animal Brick Carving in Modern Cultural and Creative Design

Bai Lian @1,2, Sharkawi Che Din @3*, Wang Li @1

- ¹ Phd Candidate, College of Creative Arts, Universiti Teknologi MARA, Shah Alam Branch, Malaysia
- ² Lecturer, College of Software, Shanxi Agricultural University, Jinzhong, China
- ³ Associate Professor, College of Creative Arts, Universiti Teknologi MARA, Shah Alam Branch, Malaysia
- * Corresponding Author: sharkawi237@uitm.edu.my

Citation: 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

ARTICLE INFO

ABSTRACT

Received: 12 Sept 2023 Accepted: 03 Nov 2023 In order to deeply study the cultural connotation, shape, color and other artistic elements of the brick carvings of auspicious animals, the brick carvings of unicorns, magpies and cranes in the Han Dynasty were taken as research objects, and high-powered microscopes and 3D scanners were used as auxiliary tools for analysis. First of all, we refer to relevant historical documents to collect information on brick carvings. Then, the lines and colors of the brick carvings were mapped to find out the characteristics of the brick carvings of auspicious animals in the Han Dynasty. Finally, the characteristics of brick carving are integrated into modern cultural and creative design to provide support for cultural and creative design. The results show that the lines of brick carving in the Han Dynasty are soft, mainly seal carving, and the materials are mainly glazed and blue bricks. The color of brick carving is mainly based on the natural color of bricks, and some are characterized by the blue and yellow glass. The posture of the mascot animal carved in brick is gentle, but it does not lose its majesty, so it has the role of symbolizing auspiciousness and town. Therefore, the shape of the auspicious animal in the Han Dynasty is like a feather, the lines are soft, and the colors are mainly blue and yellow, which can provide a reference for cultural and creative design.

Keywords: History and Culture; Auspicious Animal; Brick; Sculpt; Nowadays; Cultural and Creative Design.

INTRODUCTION

Mascot animal brick carving is a general term for auspicious animal pattern bricks, which is an artistic way to carve bricks with chisels and wooden hammers. Generally speaking, the auspicious animals of brick carving include unicorns, cranes, magpies, etc. (Agustín-Hernández, Sancho-Mir, & Fernández-Morales, 2023), symbolizing good luck. Some of the brick carvings integrate ancient mythological elements and ethnic elements, and have rich auspicious meanings. The development history of brick carving is relatively long, originating in the Tang and Song dynasties (Bayraktar, 2023), and its production process is mainly firing, laminating and so on. Although brick carving and wood carving are common carving methods in architecture (Biacsi & Kalmár, 2014), the material of brick carving is mainly bluestone, so the carving is difficult, the lines are rough, and the delicate patterns cannot be outlined. Generally speaking, the royal palace and palace will use dragons and unicorns as brick carving patterns and ordinary people mainly use magpies and cranes as brick carving patterns. However, animal motifs such as dragons, unicorns, magpies, and cranes are all symbols of national culture, representing auspiciousness (Borisov, Krivosheev, Mimokhod, & El'tsov, 2019), power, status, and longevity. Therefore, studying the production process of brick carving and the meaning of animal patterns can provide a reference for the cultural inheritance of brick carving and modern cultural and creative design. In the past, when studying brick carving, theoretical research was adopted, and quantitative research methods were lacking (Bristow, 2014). Based on this background, this paper analyzes brick carvings with the help of microscopes (4K electron microscopes)

and 3D scanners (ROM 200 models), studies the characteristics of lines, colors and materials, and deeply analyzes the characteristics of brick carvings, so as to provide support for cultural inheritance and cultural and creative design. First, this paper analyzes the meaning, content and characteristics of brick carving. Secondly, with the help of microscopes and scanners, the brick carving is analyzed, and the characteristics of the brick carving are summarized to facilitate the later induction. Finally, support for cultural and creative design.

RESEARCH METHODS AND MATERIAL OF MASCOT ANIMAL BRICK CARVING

Research Methods

Taking the brick carvings of unicorns, magpies and cranes from the Han Dynasty as the research objects, high-powered microscopes and 3D scanners were used as auxiliary tools to analyze the cultural connotation (Cao, Z., & Mustafa, 2023), shape, color and other artistic elements of the brick carvings of auspicious animals. Among them, the high-power microscope is SANQI 500 type, and the 3D scanner is ROM 200 type, which is mainly to observe the lines, textures and materials of brick carving, and restore the brick carving.

Research Process

Material of brick carving

The brick carving materials used in different regions are also different, and the cultural body type of a region represents the history, values, beliefs and lifestyles of a region. The inheritance of brick carvings from different regions helps to preserve the heritage and ensure that it is not forgotten or lost. The shape and lines of the auspicious animals carved in the bricks of the Han Dynasty are relatively rough, and the colors and craftsmanship are relatively backward, mainly because the materials used in different regions are different. The Han Dynasty auspicious animal brick carving inherited the production technology of the Western Han Dynasty and the Eastern Han Dynasty, and added apatite, carbon black and other materials to increase the hardness and corrosion resistance of the brick carving, and the material of the Han Dynasty Qilin brick carving was microscopically observed, and the results are shown in Figure 1.

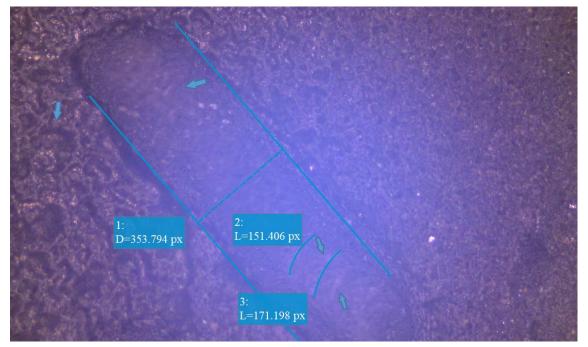


Figure 1. Observation of the Material of the Qilin Brick Carving in the Han Dynasty (Note: The data comes from 0.7 times microscope observation of brick carving materials in Han Dynasty)

From the microscope observation in Figure 1, it can be seen that the Qilin brick carving in the Han Dynasty is made of green bricks, and the green bricks contain a large number of quartz particles, so the hardness of the brick carving is large. Moreover, the carving method of brick carving is mainly horizontal seal carving, and the texture is horizontal. Therefore, the material of the Qilin brick carving in the Han Dynasty is relatively ordinary. The width of the engraving is 3.53 cm, and the length of the horizontal stripe is 1.51 and 1.71 cm. Brick carving of auspicious animals is a typical decoration in design cemeteries, often used in temples, palaces, gardens, and ancient buildings,

representing auspiciousness and auspiciousness. Brick carving of auspicious animals is a typical decoration among residents, which is often used in villas (Chang, Ivanov, & Tourtellotte, 2023), courtyards of ancient buildings, front doors, porches, screens, etc., representing auspiciousness and auspiciousness. Auspicious animal carved brick represents the carving skills of the time (Ioannis, 2020), but also represents the imagination and expectation of the working people for the future, and also has a certain modern creative concept, as shown in Figure 2.



Figure 2. Brick Carving of Auspicious Animal on the Entrance Screen of Quadrangle

The auspicious animal in Figure 2 has a modern painting style, and it is more in line with Chinese aesthetics in terms of creativity and design, showing the mighty unicorn and lion more "affinity" and making the auspicious animal more vivid. Therefore, the auspicious animal brick carving reflects modern innovative ideas, and extracting the national elements in the auspicious animal brick carving can enhance the cultural self-confidence of a society or country. The materials used in the Qilin brick carving in Henan are mainly loess, kaolin and other materials, and the observation results are shown in Figure 3.

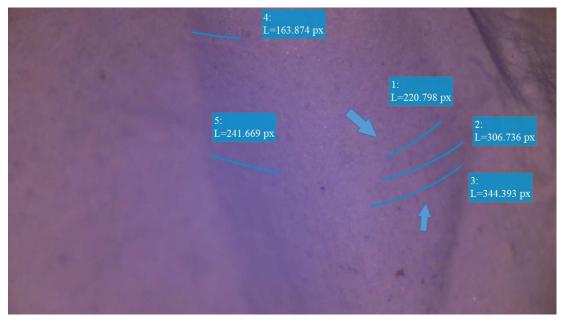


Figure 3. Observation of Brick Carving Materials in Henan (Note: The data comes from 0.7 times microscope observation of brick carving materials in Han Dynasty)

As can be seen from Figure 3, the materials of Qilin brick carving in Henan are mainly kaolin and loess, and the material is relatively delicate, so the carving of the material is a double-sided horizontal carving, and the investigation depth is 2-3cm. Some unicorns are carved in a hollow way. Some of the auspicious animal brick carvings also reflect particular values and moral principles and have essential reference value for cultural communication and cultural research, as shown in Figure 4.



Figure 4. Lion Patterns on the Lintel of Guangxi Dwellings

The lion in Figure 4 presents a well-behaved posture, curled up in a small space, indicating a kind of humility. Although the lion in the picture is curled up, its eyes are round, and its front paws are on the ground without losing its majesty. Therefore, it is necessary to excavate the cultural values and concepts of different regions in the carved bricks of auspicious animals to provide a reference for the development of cultural creativity. In addition, the materials and craftsmanship of auspicious animal brick carvings also indicate different meanings, as shown in Figure 5.



Figure 5. Kirin Modeling in Guangdong Ancestral Temple

Figure 5 shows that the auspicious animals on the beams of ancestral halls in Guangdong are made of colored glaze, and they are made in the form of copying, which not only makes the auspicious animal vivid but also highlights the importance of the ancestral halls. The auspicious animal in the picture is the unicorn, and the yellow color of yellow unicorn symbolizes honor and auspiciousness, which is a typical representative color in China (Della Torre & Monferrini, 2023). The red unicorn symbolizes strength and happiness, mainly a townhouse and a ward off evil spirits. The left and right distribution of red and yellow unicorns makes the unicorn shape more vivid and realizes a reasonable structural layout. Mountains and rivers correspond to the yellow unicorn (Elias, 2020), trees correspond to the red unicorn, and the overall shape is unified. It is impossible to match colors first in traditional blue brick material.

Engraving Process

Auspicious animal brick carving is an ancient architectural decoration technique. Its main purpose is to add beauty and mystery to the building, but it also has a certain religious, cultural, and historical symbolic significance. Auspicious animal brick carving originated in the Han Dynasty and was later widely used in the Tang, Song, Ming, Qing, and other regions, mainly to highlight residents' dignity. The process of brick carving is mainly impressions, reliefs, openwork (Fang, Xie, Zhang, J. J. Li, & Chen, 2023), round carving, and stacking. Auspicious animal brick carvings are mainly impressions, relief carvings, round carvings, and open-cut carvings, and fewer stacking methods exist (Feijoo, Matyscák, Ottosen, Rivas, & Nóvoa, 2017). The materials of auspicious animal brick carvings are mainly clay, loess, etc. (Gustin, Preloznik, & Sucevic, 2009), or fired into ceramics. In the brick carvings of the auspicious animal, dragons, pixies, phoenixes, unicorns, tigers, and leopards are the main ones to ward off evil spirits and pray for blessings, as shown in Figure 6.



Figure 6. A Crane on the Side Wall of a Shaanxi Folk House

The crane symbolizes good luck in Chinese history, heralding longevity and national security. Another example is that brick carvings in the shape of cranes are carried out on the wall in the Puyang area of Henan, mainly hoping the family will be happy and auspicious. In some areas, cranes and phoenixes are used as brick carvings and placed on home screens (Henderikx, 2015). Phoenix motifs will be used as brick carvings on the top of the walls of houses in Jiangxi Province, as shown in Figure 7.



Figure 7. Phoenix Brick Carvings in a House

The brick carving in Figure 7 shows that the phoenix is not powerful. Although it spreads its wings and flies high, it is a bit similar to the crane, indicating that the phoenix and the crane are both auspicious symbols in the Jiangxi region and fuse the two kinds of auspicious animal (Horvat, 2012). Generally speaking, ordinary cranes are made by copying, while phoenixes resembling cranes are mainly carved in openwork, showing that phoenixes are more noble than cranes. Another example is the brick carvings that integrate magpies, phoenixes, and cranes in Hubei to presuppose happiness, longevity, and auspiciousness, as shown in Figure 8.



Figure 8. Brick Carvings of Magpies, Cranes and Phoenixes in Hubei Region

The head of the auspicious animal in Figure 8 resembles a magpie, with feathers on the top of its head and a long tail resembling a magpie and a phoenix. At the same time, one foot is independent and hook-shaped, similar to a crane. This auspicious animal is a fusion of phoenixes, magpies, and cranes, and it is also an expression of the local people's yearning for happiness.

TRADITIONAL CULTURAL ENLIGHTENMENT IN THE BRICK CARVING OF AUSPICIOUS ANIMAL

Design Value in Auspicious Animal Brick Carvings

Rich Historical and Cultural Connotations

Auspicious animal brick carving is one of the important elements in traditional Chinese architectural culture, it usually appears in the decoration of ancient buildings (Jennings, 2016), with a deep historical background and cultural connotation. In modern cultural and creative design (Khan & Afrdi, 2019), applying auspicious animal brick carving can help inherit history and culture while giving new life and meaning (C. Li, 2017). The following is the application of auspicious animal brick carving in modern cultural and creative design.

Architectural decoration: Auspicious animal brick carvings can be used to decorate modern buildings, which adds classical beauty and conveys the value of history and culture. This decoration can be applied to architectural elements such as gates, walls, pillars, etc., adding much color to the building, as shown in Figure 9.



Forbidden City Cultural and Creative Qilin



The Forbidden City Brick Carved Unicorn

Figure 9. Cultural and Creative Unicorn in the Palace Museum, Beijing

The cultural and creative unicorn design of the Palace Museum refers to the shape of the brick carving and integrates the meanings of auspiciousness, rights, majesty (Marocchi et al., 2009), protection, blessing, and so on into the design of the T-shirt pattern, which not only promotes national culture but also plays a certain decorative role.

Home decoration: Auspicious animal brick carving can be applied to the design of furniture, ceramics, tiles, and other household items (Qiao, 2019), giving modern homes a more traditional Chinese cultural atmosphere, which can be achieved through carving, printing, painting, and many other ways.

Cultural and creative products: Using the shape of auspicious animal brick carving in the design of cultural and creative products (Ruzayeva, Engovatova, & Yaganov, 2020), such as handicrafts, jewellery, etc., can create unique cultural products and attract consumers at home and abroad.

Scenic areas and public art. In tourist attractions, public buildings, and urban sculptures, brick carvings can make tourists and citizens feel the charm of traditional culture and improve the city's cultural atmosphere (Sohn, Cho, & Im, 2012).

Education and media: By using the image of brick carvings in textbooks, brochures, films, television, and other media, traditional Chinese culture can be popularized to more people and interest in history can be stimulated (Vaz, Martín-Seijo, Carneiro, & Tereso, 2016).

Cultural exchange and diplomatic gifts: Applying auspicious animal brick carving to gifts, souvenirs, and cultural exchange activities can become diplomatic gifts with Chinese characteristics and spread Chinese culture (Vorlík, 2013).

Modern art creation: Some modern artists can also incorporate the brick carving elements of the auspicious animal into their creations, creating works of art that blend tradition and modernity and stimulate the audience's thinking (N. Wang et al., 2018).

In short, auspicious animal brick carving has a broad application prospect in modern cultural and creative design. By combining this traditional element with modern design, history and culture can be passed on while also meeting the needs of contemporary people for unique (Winterbottom, 1990), culturally meaningful products and environments. This integration helps preserve and inherit traditional Chinese culture while promoting the development of cultural and creative industries. Auspicious animal brick carving is a traditional Chinese architectural decorative element commonly used to decorate buildings such as temples, palaces, and ancient mansions. They usually represent symbols of auspiciousness and guardianship and have deep cultural connotations (Yan et al., 2022). Auspicious animal brick carving is a traditional Chinese architectural decorative art that is usually found on the exterior and interior of ancient temples, palaces, and other essential buildings. They have unique shapes and symbolic meanings and have an important influence on modern cultural and creative design (Zhao, Guo, & Y. W. Wang, 2015).

The Art and Decorative Form of The Ancients

The exquisite craftsmanship and exquisite craftsmanship of the brick carvings make them ideal for art decorating. They can be used to decorate homes, commercial spaces (Zherdiev, 2020), or public buildings, increasing the space's cultural connotation and artistic value. Auspicious animal brick carving is an important decorative element in traditional Chinese architectural culture, with a long history and profound cultural connotations. It usually appears in the walls, pillars, eaves, and other locations of ancient palaces, temples, gardens, and other buildings as a symbol of good luck used to ward off evil spirits and pray for peace and peace. In modern cultural and creative design, the auspicious animal brick carving is widely used to inherit history and culture and give artistic decoration. The following is information about the application and significance of auspicious animal brick carving in modern cultural and creative design.

Cultural inheritance and protection. Incorporating the brick carving elements into the modern design helps to inherit and protect the traditional Chinese architectural culture. These decorations not only renew the recognition of this ancient art form but also allow the younger generation to understand and appreciate traditional culture.

Artistic innovation. Modern cultural and creative designers can create novel works of art and decorations through reinterpretation and innovation of the brick carvings of Swiss animals. This innovation helps to merge tradition with modernity to form unique cultural symbols.

Interior decoration. Auspicious animal brick carving modeling can be applied to interior design, such as home decoration, hotel lobbies, restaurants, and other places. These decorations can exist as murals, sculptures, hanging ornaments, etc., adding cultural atmosphere and artistic value to the space.

We are building a façade design. The use of brick carvings on the façade of the building can give the building a unique visual character and form a harmonious integration with the surrounding environment. This design can enhance the building's recognizability, making it a highlight in the cityscape.

Souvenirs and gifts. Applying the brick carving elements to the design of souvenirs and gifts can provide valuable cultural souvenirs for tourists and collectors. These objects are not only decorative but also carry historical and cultural connotations.

In short, the brick carving of auspicious animals has rich artistic decoration potential in modern cultural and creative design. By incorporating this traditional element into modern creation, history, and culture can be inherited, cultural innovation can be fostered, and the artistic experience of modern life can be enriched. Auspicious animal brick carvings are often used as decorative elements in ancient buildings, adding to the beauty and atmosphere of the building. In modern architecture and interior design, the shapes and patterns of auspicious animal brick carvings can be applied to walls, furniture, decorations, etc., to create a unique cultural atmosphere for the space (Elias, 2020).

The Future Vision of The Princes and Nobles

In the dwellings auspicious animal brick carving, the auspicious animal brick carving can become a symbol of the prince and nobility, attracting more nobles to carry out brick carving designs. Through the use of auspicious animal brick carvings in dwellings, guide the souls of princes and nobles. Auspicious animal brick carving represents the art and value cognition of the time and is one of the primary decorative forms of dwellings. Auspicious animal brick carving is an important element in dwellings and has a long history and cultural connotation. In the construction of dwellings, the shape of auspicious animal brick carvings has the role of townhouse and blessing to prevent the theft of dwellings. The auspicious animal brick carving represents the essence of dwelling construction and is a symbol that integrates the art of the time into the design of dwellings, helping to protect and inherit this cultural heritage.

Each auspicious animal brick carving has unique historical and symbolic significance, recording the beliefs, achievements, and cultural traditions of the princes and nobles and is a record of Chinese history. The shapes of auspicious animal brick carvings usually have gorgeous details and exquisite craftsmanship, and they can be used as decorative elements in dwellings, adding artistic and aesthetic value and having important design value. Auspicious animal brick carvings are a unique representative of dynastic culture, and integrating them into dwellings can create a unique artistic conception and is a record of the unique culture. Using auspicious animal brick carvings in dwellings can provide more cultural connotations that record residents' history, development process, and symbolism. The auspicious animal brick carvings of different regions have their own characteristics and styles, which can reflect the characteristics of the dynasty. As one of the main decorations of the dwellings, the auspicious animal brick carving was an expectation of residents and an important embodiment of the culture at that time.

The Influence of Auspicious Animal-Carved Bricks on Cultural and Creative Design

Precipitate and Inherit National Culture

As a part of traditional Chinese architectural culture, auspicious animal brick carvings have been inherited and protected through modern cultural and creative design. This helps to transmit ancient cultural heritage to new generations and maintain cultural continuity. Auspicious animal brick carvings carry China's rich traditional culture and history. Using these elements in modern cultural and creative design contributes to preserving and reviving this valuable cultural heritage. They can be reinterpreted and incorporated into contemporary design to appeal to a new generation while preserving the importance of traditional art.

Auspicious animal brick carving is a decorative art in traditional Chinese architecture, and it is often used to decorate temples, palaces, gardens, and ancient buildings. This unique shape has important inheritance cultural value in modern cultural and creative design, and its inheritance culture in modern cultural and creative design will be discussed below.

A fusion of tradition and modernity: Modern cultural and creative design usually tries to combine traditional elements with modern aesthetics. The shape of auspicious animal brick carving has unique aesthetic characteristics, it can be used to decorate modern buildings, furniture, jewellery, etc., so that traditional culture can be inherited and integrated into modern life.

Artistic expression and innovation: Artists and designers can express their creativity by reinterpreting and innovating the shape of the brick carvings. They can incorporate these elements into a variety of mediums, such as painting, sculpture, ceramics, etc., to create new and unique visually striking works.

Inheritance of traditional craftsmanship: The production of auspicious animal brick carvings requires skilled

craftsmanship, and the vitality of this traditional craft can be maintained. At the same time, modern technology can also improve traditional processes and increase production efficiency.

Transmission of cultural stories: Auspicious animal brick carvings often carry rich cultural stories and symbolism. Modern cultural and creative design can convey these cultural elements through story-based design, helping people better understand and appreciate traditional culture.

Tourism and cultural promotion: Applying auspicious animal brick carvings to tourist attractions and souvenirs can attract tourists and help them understand China's cultural heritage. This contributes to the spread and promotion of culture.

Therefore, the brick carving of an auspicious animal carries rich cultural inheritance value in modern cultural and creative design. Through innovation, integration, storytelling, and skill transmission, this traditional art has been able to revitalize modern society and continue to provide people with aesthetic and cultural enjoyment. Auspicious animal brick carving is one of the representatives of ancient Chinese architecture and art, which carries rich historical and cultural connotations. Using auspicious animal brick carvings in modern cultural and creative design can help inherit and promote Chinese traditional culture and let people better understand and cherish historical heritage. As part of ancient architecture, auspicious animal brick carvings carry the essence and traditions of ancient Chinese architecture. In modern cultural and creative design, inheriting and protecting this cultural heritage helps pass on ancient art and building techniques so that it will not be forgotten.

Promote the Integration of Chinese and Western Cultures and Creative Expression

Auspicious animal brick carving is a crucial element in traditional Chinese architectural culture, usually appearing on ancient palaces, temples, gardens, and other buildings, with a long history and rich cultural connotations. In modern cultural and creative design, the shape of the brick carving can be skillfully integrated to inherit the history and culture and express it creatively. Here are some ways to creatively express the brick carvings of auspicious animals in modern cultural and creative design.

They are reinterpreting traditional forms. The shape of the traditional auspicious animal brick carving is reinterpreted to create a new, modern design. It can be simplified, abstracted, or changed in proportions to give new life and expression to the auspicious animal, adapting it to modern aesthetics.

They are combined with modern materials and craftsmanship. Traditional brick carvings are usually made of traditional materials such as masonry. However, in modern cultural and creative design, new materials and processes, such as fiberglass, ceramics, metals, etc., can increase the diversity and creativity of auspicious animal brick carvings.

They are applied in different fields. Introduce the shape of auspicious animal brick carving into the design of different fields, such as home decoration, fashion design, jewellery, etc. By incorporating traditional elements into these areas, products can be given unique cultural values and stories.

Combine contemporary themes and stories. Combine brick carvings with modern society, culture, and values to create works related to contemporary themes. For example, brick carvings can be designed to convey modern themes such as environmental protection, harmony, and innovation.

Digital and virtual reality experiences. Use digital technology and virtual reality to create interactive experiences related to brick carvings. This can include virtual games, virtual art exhibitions, AR apps, etc., to attract the younger generation's interest in traditional culture.

Work with artisans. They were working with traditional craftsmen, combining their skills with the creativity of modern designers. This collaboration can promote the transmission of traditional craftsmanship while creating unique cultural and creative products.

The creative expression of auspicious animal brick carving in modern cultural and creative design is an artistic practice that integrates tradition and modernity, culture and innovation. By reinterpreting and combining modern elements and diverse applications, it is possible to inherit history and culture while bringing unique aesthetic and cultural values to modern society.

Establish a Unique Design Concept

The image of the brick carvings often symbolizes good luck, happiness, and prosperity. Therefore, incorporating these elements into a modern design can give an auspicious symbolism to a product, brand, or place, attracting people's attention and affection. Auspicious animal brick carving is one of the important elements in traditional Chinese architectural culture, with a long history and profound cultural connotation. It is often used for the decoration of ancient buildings and represents auspiciousness, shelter, and peace in ancient Chinese culture. In modern cultural and creative design, the shape of an auspicious animal brick carving is often used

because it has unique cultural symbols and artistic value the following are some relevant points, such as Henan Zhengzhou's cultural and creative content to use the dragon in the Nine Dragon Wall as a display object, as shown in Figure 10.



Figure 10. Zhengzhou Cultural and Creative Design (Source: The Figure comes from the dragon pattern antique brick created by the author according to the dragon pattern in Han Dynasty)

In the design in Figure 10, the Nine Dragon Wall pattern has been revised to highlight the eyes of the dragon, making the dragon more vigorous, indicating the vitality of the Zhengzhou area. Although the pattern in Figure 8 is a simple design, it reflects the characteristics of the Chinese nation and is also propaganda for the traditional brick carving culture.

Using auspicious animal brick carvings inherits traditional cultural elements to modern times, allowing people to feel the continuity of China's long history and architectural art. This helps maintain cultural identity and historical awareness. Because the auspicious animal brick carving has the design concept of Xiangrui, it can make the cultural and creative design have the following characteristics.

Auspicious meaning. Auspicious animal brick carvings usually present auspicious animal images such as dragons, phoenixes, lions, etc., which all have special symbolic meanings in Chinese culture. They represent auspicious meanings such as power, longevity, happiness, etc., so their use in modern design can bring auspicious and good luck to a product or place.

Decorative and aesthetic value. The shape of the auspicious animal brick carvings is usually very exquisite, with a strong artistic atmosphere. They can be used to decorate various products such as architecture, furniture, ornaments, etc., increasing their decorative and aesthetic appeal, and attracting more consumers.

Cultural and creative integration. In modern cultural and creative design, designers often integrate the elements of auspicious animal brick carving with modern style to create new products with unique cultural characteristics. Cultural creativity can not only meet the actual needs of traditional culture but also enhance the national consciousness of young people and make them more interested in traditional culture. Mascot animal brick carving can realize the rational planning of the city, enhance the cultural characteristics of the city, enhance the cultural heritage of the city, and make the city more culturally charming. Generally speaking, the application of mascot animals in modern design can reflect the value of traditional Chinese culture, realize the inheritance and innovation of culture, and inject life into the development of traditional culture. The animal symbols in the mascot animal brick carving have the functions of auspiciousness, protection and blessing, and have extremely high aesthetic value and blessing value, which is consistent with the current mainstream social concept and

blessing content. In modern design, the mascot animal symbol can not only serve as a representative of the brand but also enhance the brand value and enhance the attractiveness of cultural and creative design. In traditional Chinese culture, the mascot animal can evoke the inner values of the Chinese nation, align with modern aesthetics, and promote the development of multiculturalism. Many companies choose dragons and unicorns as symbols in the creation of auspicious animal products, which can enhance the symbolic meaning of cultural and creative products. Therefore, the mascot animal has a strong cultural value and deep cultural connotation in modern design, which can enhance people's national pride and identity.

CONCLUSION

As a traditional Chinese architectural cultural content, the mascot animal expert has cultural heritage and value and is the precipitation of traditional Chinese culture. In cultural and creative design, we should inherit the modeling advantages and cultural heritage of the auspicious animal carving, and design representative works. Through the actual measurement, it is found that the mascot animal brick carving has strong particularity in terms of shape and material, and the shape is diverse. Among them, green brick is the main material of auspicious animal brick carving, which has acid and alkali resistance and long-term retention, which can provide a basis for modern architecture and cultural and creative design. At the same time, the inspired artistic value of the mascot animal pattern will promote the cultural and creative design, so that its culture and connotation can be more fully reflected in modern design, and the effective inheritance of traditional culture will be realized. There are limitations in this study, mainly the collection of samples of Han Dynasty brick carvings and the analysis of related materials. Due to limited funds, the accuracy of microscopes and scanners is relatively low. The accuracy of the equipment will be improved in the future, and the data collection scope of Han Dynasty brick carvings will be expanded.

REFERENCES

Agustín-Hernández, L., Sancho-Mir, M., Fernández-Morales, A.(2023). Layout and geometry in the medieval ribbed vault with brick ribs in Aragon. *Ega-Revista De Expresion Grafica Arquitectonica*, 28(47), 96-109.

Bayraktar, M. S. (2023). Alaçam Burhanİye primary school. Sanat Tarihi Dergisi-Journal of Art History, 32(1), 313-335.

Biacsi, K., & Kalmár, J.(2014). Applied geology: Mineralogy and petrography of the building materials of Arac ruined church (Vojvodina, Serbia). *Carpathian Journal of Earth and Environmental Sciences*, 9(4), 225-236.

Borisov, A. V., Krivosheev, M. V., Mimokhod, R. A., & El'tsov, M. V. (2019). "Sod blocks" in kurgan mounds: Historical and soil features of the technique of tumuli erection. *Journal of Archaeological Science-Reports*, 24, 122-131.

Bristow, C. M. (2014). The geology of the building and decorative stones of Cornwall, UK. Geological Society of London Special Publications, 391(1), 93-120.

Cao, Z., & Mustafa, M. B. (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.

Chang, C. D., Ivanov, S. S., & Tourtellotte, P. A. (2023). "Animal-style art," And special finds at iron age settlements in southeastern Kazakhstan: Chronology, trade, and networks during the Iron age. *Arts*, 12(1), 28.

Della Torre, S., & Monferrini, S. (2023). Palazzo Casati, Caccia, Natta in Novara: Observations based on new archival evidence. *Archistor-Architecture History Restoration*, (19), 4-45.

Elias, H. (2020). Women's role in the production and sale of alcohol in Han China as reflected in tomb art from Sichuan. *Early China*, *43*, 247-284.

Fang, X., Xie, L., Zhang, B., Li, J., & Chen, W. (2023). Investigation and analysis of ancient brick carvings of the Liuhe Pagoda in Hangzhou. *Archaeometry*, 65(6), 1285-1295.

Feijoo, J., Matyscák, O., Ottosen, L. M., Rivas, T., & Nóvoa, X. R. (2017). Electrokinetic desalination of protruded areas of stone avoiding the direct contact with electrodes. *Materials and Structures*, *50*(1), 1-15.

Gustin, M., Preloznik, A., & Sucevic, M. S. (2009). The tombs in the former church of st. Catherine in Piran. *Annales-Anali Za Istrske in Mediteranske Studije-Series Historia Et Sociologia*, 19(2), 303-312.

Henderikx, P. A. (2015). William II or Florence the Guardian?: Questions about a tomb and a skeleton in the Abbey Church at Middelburg. *Bmgn-the Low Countries Historical Review*, 130(4), 78-88.

Horvat, Z.(2012). Accessory elements and details in burgs of continental Croatia. *Prostor: znanstveni časopis za arhitekturu i urbanizam*, *20*(1), 2-19.

Ioannis, C. (2020). The catholicon of the monastery of Agios Panteleimon on the Island of Ioannina, Greece. *Studia Slavica et Balcanica Petropolitana*, (2), 125-140.

Jennings, N. (2016). The Chapel of Contador Saldana at Santa Clara de Tordesillas and the fashioning of a noble identity by an early fifteenth-century Converso. *Hispanic Research Journal-Iberian and Latin American Studies*, 17(5), 363-383.

Khan, A., & Afrdi, A. (2019). Gasification of solid waste. *Journal of Mechanics of Continua and Mathematical Sciences*, 14(2), 250-257.

Li, C. (2017). Rethinking the origins of Han Dynasty stone-carved tombs. World Archaeology, 49(5), 700-717.

Marocchi, M., Marocchi, M., Dellisanti, F., BarGossi, G. M., Gasparotto, G., Grillini, G. C., & Rossi, P. L. (2009). Mineralogical-petrographic characterisation and provenance of "Porta Nuova" stones: A XVI century gate in Ravenna (Italy). *Periodico di Mineralogia*, 78, 13-28.

Qiao, F.(2019). Research on the architectural decoration of traditional Chinese vernacular dwellings. *Journal of Architectural Conservation*, *25*(3), 136-191.

Ruzayeva, E. I., Engovatova, A. V., & Yaganov, A. V.(2020). White-stone carving in the facade decoration of the Yaroslavl Churches in the early 13th Century: Observations and preliminary conclusions. *Kratkie Soobshcheniya Instituta Arkheologii*, (261), 294-304.

Sohn, D., Cho, Y. S., & Im, S. (2012). A novel scheme to generate meshes with hexahedral elements and polypyramid elements: The carving technique. *Computer methods in applied mechanics and engineering*, 201, 208-227.

Vaz, F. C., Martín-Seijo, M., Carneiro, S., & Tereso, J. P. (2016). Waterlogged plant remains from the Roman healing spa of Aquae Flaviae (Chaves, Portugal): Utilitarian objects, timber, fruits and seeds. *Quaternary International*, 404, 86-103.

Vorlík, P. (2013). The interior of Jested Mountain Hotel and television tower. *Architektura & Urbanizmus*, 47(3-4), 234-253.

Wang, N., Zhang, T., Min, J., Li, G., Ding, Y., Liu, J., ... & Lei, Y. (2018). Analytical investigation into materials and technique: carved lacquer decorated panel from Fuwangge in the Forbidden City of Qianlong Period, Qing Dynasty. *Journal of Archaeological Science: Reports*, 17, 529-537.

Winterbottom, D. (1990). Sculptured brick + A profile of Smith Mara with a look at the processes of carving and installation. *Landscape Architecture*, 80(12), 62-64.

Yan, S., Xie, N., Liu, J., Li, L., Peng, L., & Jiang, S. (2022). Salt weathering of sandstone under dehydration and moisture absorption cycles: An experimental study on the sandstone from Dazu rock carvings. *Earth Surface Processes and Landforms*, 47(4), 977-993.

Zhao, S. D., Guo, H. B., Wang, Y. W. (2015). Ecological environment and traditional craft: Taking Huizhou three carvings as an example. *The Anthropologist*, *21*(1-2), 80-88.

Zherdiev, V. V. (2020). Three Orthodox temples of Lappeenranta - Art through the prism of history. *Vestnik Sankt-Peterburgskogo Universiteta-Iskusstvovedenie*, 10(4), 609-636

ETHICAL DECLARATION

Conflict of interest: No declaration required. **Financing:** Ministry of Education's Industry-Academic Cooperationand Collaborative Education Project "Game Planning Course TeachingContentand Curriculum System Reform with Shanxi Culture as the Theme Case" Project No. 201902213007. **Peer review:** Double anonymous peer review.