

Analysis of Similarities and Differences between Potala Palace and Edinburgh Castle under Different Historical Background

Junyi Zhao

*Edinburgh College of Art, The University of Edinburgh, Edinburgh, UK
zjy1026282377@gmail.com*

Abstract: National culture is independent of the mainstream culture and constitutes the mainstream culture. To some extent, the national architecture reflects the development of local culture and history and the symbol of the local city. National architecture relates to the development of local culture and customs and shows the unique national belief in a solid form. The relationship between national culture and architecture is closely linked and complementary. This paper mainly studied the differences in national architecture between Chinese and Western cultures, taking Potala Palace and Edinburgh Castle as examples, analyzing and summarizing their similarities and differences. As a unique product of the development of local culture, national architecture itself has very high historical and cultural value. Some buildings use as tools and symbolize the spiritual sustenance of local culture. Therefore, this article regarding the national culture to the architectural influence analysis may construct the perfect architectural theory knowledge. To help the development of modern architectural design concept, better integration of traditional culture, absorb experience to retain historical culture.

Keywords: National culture, Architecture, Potala Palace, Edinburgh Castle

1. Introduction

As a kind of cultural phenomenon bearing the culture of a particular region, architecture involves the economic structure of the whole society and the level of science and culture [1]. As a part of the regional product, the formal meaning of architecture is acquired from the local culture and customs. Due to different local cultures, different nations and countries have different historical origins, psychological structures, and thinking modes. At the same time, these cultures largely determine the architectural style and design theory. With the development of globalization, more and more scholars have begun to study the differences between Chinese and Western architectural culture to discuss the influence of traditional culture on modern design. According to modern design characteristics, this paper puts forward how to solve better the inheritance of traditional culture in modern Chinese architecture [2].

Previous research had analysed the main reasons for the differences between Chinese and Western architecture and draws lessons from them to develop a new and unique architecture model suitable for China. The current mainstream research model attributes China's design-based ideas to Taoism and Confucianism. The Western design mode is more inclined to be influenced by the Greek culture

and religion under the "rational" architectural mode. Taoism advocates returning to honest thought and expressing an abstract artistic conception, especially prominent in ancient Chinese garden art. The Greek architectural style more influences western architecture. They tend to regard aesthetic value as scientific value, rational and fighting spirit, individual and subjective consciousness, religion and willpower [1]. At present, academic papers focus on studying the contrast between Chinese and Western architecture under the relatively mainstream culture. However, under the branch of the mainstream culture, there are still some buildings with national characteristics that are seldom studied. The design framework of these buildings follows the architectural design template of the mainstream culture. However, it is integrated with the local culture in detail.

The national characteristics of Potala Palace architecture are mainly manifested in its religion and the internal function of the one, and at the same time, through all artistic means, to create a complete image of architectural art in order to ensure that the architectural embodiment of the spiritual realm and religious thinking is highly consistent [3]. The national character of the Edinburgh Castle is reflected in the long history of military struggle, the change of function and layout of the building to meet the historical trend, and the Edinburgh Castle as a symbol of authority, which also reflects the national character of the Scottish People's pursuit of Independence and freedom.

Ancient architecture is a national historical and cultural heritage that has its aesthetic reference value for modern architectural design to provide a specific basis for theoretical reference. Both the Potala Palace and the Edinburgh Castle are iconic buildings of the city, and the architecture of the city itself is very distinctive. Tibetan and Scottish cultures have unique national cultures, different from the national mainstream culture in an enormous scope. The unique national culture makes them both independent of the mainstream culture and has something in common. This paper takes Potala Palace and Edinburgh Castle as the research object to analyze the similarities and differences. The research aims to perfect and enrich the lack of research in the field of ethnic studies and sum up the experience for the later development of architectural patterns, for the new era of architectural concept to provide new ideas and theoretical basis.

2. Literature Review

Some buildings in China and the West were initially built to assert imperial power and consolidate rule throughout history. It can create a sense of awe from the appearance and reflect the entire community at that time in the building of a manifestation of the highest achievements in technology.

Potala Palace was built and rebuilt primarily to maintain the imperial power's stability, win the hearts and minds of the people, and promote religious ideals. The later use of the Edinburgh Castle by the royal family also demonstrated its necessity as a centre of power and politics. The similarities are that both are products of absolute monarchical rule. However, because of the differences between Chinese and Western cultures, even the cultural concepts of specific nations, Potala Palace and Edinburgh Castle are arranged in space, design techniques, and other details have a very different manifestation.

2.1 A Brief History of Edinburgh Castle

The Edinburgh Castle is a representative part of Scottish castle architecture, and academic research on Scottish castles began with the rise of the romantic tradition in the early 19th century. Part of the British elite was interested in medieval history [4]. The Edinburgh Castle can be described as a centre of power. It is exterior emphasises defensive forces while at the same time serving as a modular functional building for the royal residence. The Edinburgh Castle is particularly prominent in Royal Scottish architecture. Edinburgh Castle is located on Castle Rock in central Edinburgh and was formed around 340,000,000 BC during periods of volcanic activity. It dates back at least to the Late

Bronze Age (about 900 BC) and today, with an archaeological record of about 3,000 years of human settlement. The first mention of Edinburgh was in C. 600 when it was called Din Eidyn. Edinburgh is now known as Din Eidyn after Din Eidyn was taken by force from Angles of Northumbria.

The earliest Edinburgh Castle was built in c. 1124 when David I (David I, Malcolm and Margaret's youngest son) of Scotland transformed a house on Castle Rock into a royal castle. It was not until about the 16th century that it was recorded that the British called the Castle "Winged Rock" and the Scots the "Maidens Castle" or "Virgins Castle" [5]. Walking through Fog Gate, built by Charles II, one can see what is thought to be Edinburgh's oldest building, 'St Margaret's Chapel, built by King David I around 1130. In medieval Scotland, Edinburgh Castle was a place where royal power was gathered as part of a system of government that largely determined the physical layout of the castle's interior. These three structures -- the castle, the government, and the archives- exist simultaneously and parallel.

In the 1540s, James V built a stone vault on Crown Square in the castle to protect the royal archives inside, the direct precursor of the modern National Archives of Scotland. The earliest evidence of guns in the castle dates to 1384 when the government purchased the raw materials for gunpowder for the royal castle. From the beginning, the castle served as a centre for the storage and maintenance of cannons, including the famous Mons Meg. Edinburgh Castle also existed as the first centre in the British Isles to produce heavy bronze cannons during the reign of James IV [6].

The Edinburgh Castle is an important royal arsenal because of its reputation and status as a royal residence and political centre and its unique geographical location to access Edinburgh's facilities and skills, near the port of Lyss [7]. During the reign of Alexandre (1249-1286), the Edinburgh Castle was used as the royal family's principal residence, the Archives Nationales, and the Treasury of the government.

2.2 A Brief History of Potala Palace

As a representative symbol of Tibetan Buddhist Zongbao style architecture, Potala Palace shows the concept of Tibetan culture and religious thought in the layout of architectural groups and the colour and decoration of single buildings. The history of the Potala Palace has lasted for more than 1300 years [8].

The Potala Palace has begun to take shape as early as Tibetan king Songzan Ganbu. As the living place and political centre of the Dalai Lamas, the Potala Palace is mainly composed of three parts: the palace, the Buddha Hall and various political institutions. The palace starts from the hillside of the red mountain. Furthermore, the main buildings include the BaiGong (White Palace), the HongGong (Red Palace) and various surrounding buildings. It is a religious castle with the unification of the state and the church and an independent kingdom. In Songtsän Gampo's time, the palace was often called "The HongShanGong (red mountain palace)" or "The HongGong (Red Palace)". At the end of the Qing dynasty, people called it Zipozhang or Puzhangmabao to show respect. It was not until the Republic of China that the term "Potala Palace", commonly known as "The second Mount Putuo", was officially recognized [9].

The current layout of the Potala Palace is composed of three parts: the palace, the Buddhist Hall and the Pagoda hall. The original form of Potala Palace began when the 28th Tibetan emperor Zaputuo Riannian Zan built a natural training cave and residence. Around 633, Songtsan Gambo moved the centre of government to Luoji, which basically proves that the prototype of the early Potala Palace was completed before 633. The Potala Palace began to expand after Princess Chi Zu entered Tibet and married. However, it is impossible to verify the size of the palace as "999 houses, with a total of 1,000 houses on top of the Zang Pu Chamber" due to the lack of murals and historical materials. The subsequent expansion occurred during princess Wencheng's visit to Tibet during the Tubo period. The Buddhist Practice cave preserved today is where Songtsen Gampo and Princess Wencheng lived

and practised Buddhism. The lightning fire caused by the sky thunder during the Chishamatsu Desan period burned down nearly half of the Potala Palace, but it was not repaired due to social unrest and other reasons. In 1642, the fifth Dalai Lama, the Living Buddha of Tibet, unified the regime and restored the Palace complex of the Potala Palace with the White House as the main body [10].

The two buildings above are both highly symbolic representative buildings in different cultural context. However, unlike the mainstream architectural style in the area, the two buildings have developed their national characteristics under various factors. They both have the design style of the mainstream culture, including the design concept of national style. By comparing Edinburgh Castle with Potala Palace, we can perfect the theoretical deficiency of the development of national culture under the mainstream culture. At the same time, for the development of modern architecture after the concept of design, to provide some theoretical supplement, further development and innovation of the architectural design concept of the new era.

2.3 Related Works

There are many studies comparing Chinese and Western architectures. After comparing Chinese and Western architecture, Mu divided the reasons that influence the difference between Chinese and Western architectural styles into two categories. One is external reasons embodied in natural and geographical environment factors. Since the ruling areas of ancient China were mainly plains, and people relied on nature and the living environment of group living, buildings mainly were represented in the form of architectural complexes. Due to mountain terrain and space, buildings are mainly independent castles and churches in the West. The other is internal reasons, manifested in political culture, humanities and religion. Political culture will affect the style of architecture, which is the epitome of a country's political culture. Specifically reflected in China's centralised rule of architecture emphasises imperial power and hierarchy. However, western political culture emphasises democracy and freedom, and the structural layout of most cities is irregular and radial [2].

When Guo Huayu compared the Forbidden City and Versailles palace, he analyzed the ideological concepts of Chinese and Western people from a political perspective. Also, he analyzed the influence of political objectives on an architectural layout. He found that due to the enormous differences between Chinese and Western cultures, politics would also change with people's ideas. People's cognitive model and thinking mode of nature will be fundamentally different, making the Palace of Versailles and the Forbidden City. However, they have a similar construction background -- palace architecture under the rule of the monarchy, there is a considerable gap in the expression of space and architectural style. Traditional Ancient Chinese palace architecture pays more attention to the idea of "centre", believing that only the core can cover the surrounding area, so the site selection and layout are located in the city's centre.

Furthermore, to ensure the emperor's safety, the space image of multiple encircling was widely used. In contrast, western palaces are more influenced by Christian culture, and their spatial pattern can be said to be a manifestation of cultural control and expansion. Such architectural expression is also the embodiment and tendency of national politics, and the nature of religion is a reason to win over people [11].

A study found that Chinese and western architectural different reasons. Some are reflected on the cultural differences between Chinese and western philosophy, and draw the architecture is a cultural phenomenon, Chinese and western customs, the aesthetic concept with the development of history and language are showing the profound change. However, the cultural connotation is always will not change. These ideas and consciousness are reflected in the form of architectural expression. Influenced by Confucianism, Taoism and various domestic and foreign Buddhists, China emphasizes natural beauty and symmetrical layout in architectural and garden planning. The western aesthetic

value is reflected in the emphasis on scientific value. Both aesthetic requirements are influenced by philosophy and culture, highlighted in architectural styles [1].

Li Linghong's research has discussed the influence of religious thoughts on the layout, scale and structure of Chinese and Western architecture. Under the influence of Taoism, Buddhism and Confucianism, China attaches great importance to the site selection of architecture, the word "feng shui" emphasized in traditional culture. For the planning of architectural space layout, western architecture pays more attention to the sun's orientation because Christianity and Catholicism believe that God will protect people through light. The scale of architecture in China is more to pursue a kind of human body comfort, more inclined to moderate affinity scale. In the West, the purpose of the church is to show the distance between God and man. In terms of structure, the transparency of ancient Chinese architecture is the best way to express the spatial characteristics. Taoism advocates nature, so the concept of closeness to nature is vividly reflected in ancient Chinese architecture [12].

The construction of Chinese and western buildings does not open the basic idea of the development of architectural culture. It can be said that the development of architecture is the cultural record of local development. The material development of architecture needs to serve the social and humanistic activities directly, while in the spiritual value, architecture brings more physiological and psychological influence on the people. It is more about shaping a psychological perception. Architecture is a symbol of culture, and the compatibility and openness of Chinese and Western architectural, cultural history are interlinked [13].

In the past, most studies compared and analysed the formation of Chinese and Western architectures from the perspective of religion, politics, culture, history, nature, geography, even language environment, and other factors. The influence of these factors on architecture can be reflected through all aspects of architecture. Therefore, this paper will compare Edinburgh Castle and Potala Palace from the architectural design concept, site selection, layout, materials, and appearance, which greatly influence architecture. This study tries to sum up the differences with more national characteristics.

3. Discussion

3.1 Similarities

Although the Edinburgh Castle and the Potala Palace were built at different times and places, they were built under imperial rule. In the distribution of some local functions, for example, the royal residence and the political centre were in the same building simultaneously. The palace's existence was a symbol of the highest level of social construction at that time. The construction style of the building itself was related to the prevailing religious ideology, and it was a manifestation of imperial power. As the site of the royal residence, both buildings contain an extensive collection of rich and valuable objects; examples include the Edinburgh Castle's Crown Jewels and the historical murals inside the Potala Palace Hall, which show the royal family's extreme use of power at the time. Both Potala Palace and the Edinburgh Castle have experienced varying degrees of war and natural disaster in their long histories. In the restoration and reconstruction, it is also constantly building new features to ensure the actual needs of the crowd at that time. Both buildings have undergone name changes, indicating that the appearance of the time was somewhat different from what people now see while also showing that both buildings were formed after continuous renovation and expansion. The two also have a higher similarity from the architectural function: the political and religious union building existence refers to the outward appearance manifestation, and the concrete emphasis is different. Both buildings have historically been built for a "representational" purpose.

3.2 Differences

3.2.1 Architectural Design Concept

The design of the Potala Palace building is based on the ideas of the local Tibetan Buddhism. Furthermore, it is more about the idea that the gods are far from the people. At the same time, the construction of palaces and monasteries and the surrounding environment to maintain harmony and integration of human landscape into nature enriched the visual effect of beauty by highlighting the class gap. The whole building exudes the idea of respecting nature and unity. It neither stresses the symmetry of the central axis of mainstream Chinese architecture nor follows the golden ratio to build but is more a kind of design concept of taking things as they come. Under the condition of guaranteeing the essential internal functions, the architects created a deep and tortuous internal passage. They integrated it with the interior decoration to achieve a step-by-step artistic effect, which enriches the level of the interior of the space. It also visually increases the volume of the building. And giving the psychological hint of soaring into the clouds, thus further highlighting the yearning for the gods and the Tibetan Buddhism in the building. The comparison of the entire palatial complex with the surrounding environment reflects everywhere the highest level of architecture that can be achieved at that time. Both the contrast between manufactured and nature and the contrast between magnificence and simplicity, these powerful contrasts reinforce the sacred religious position of Potala Palace and enhance the artistic aesthetic value of the building.

The Edinburgh design concept was not a design as a forced choice based on historical circumstances. The original building was designed to highlight the importance of the royal family as a symbol of the city. Nevertheless, later, as the war unfolded, the primary function of the building evolved to serve military purposes, focusing on the concept of practicality and functionality in times of war at that time. Many of the decorative symbolic buildings were forced into using the war site. The architecture of Edinburgh Castle is a product of history. Many decorative designs record the history of the time, which is an excellent help to historical research. However, there is not much written about the traditional cognitive design style. The later Edinburgh Castle was conceived as a combination of military and imperial power, partly for historical reasons and partly to better complement the war's success. Historical reasons make the building both militarily practical and functional and become part of the royal residence, achieving a complementary role.

Both have different emphases on architectural expression form. Potala Palace's design concept reflects the Tibetan national culture, religious worship, and the surrounding environment, forming a harmonious relationship between man and nature. Potala Palace's interior design is also in line with the step-by-step concept of mainstream culture, which uses a more complex line of action and a variety of decorations to bring people a multiple and new experience. The building is more sensuous, a symbol of class privilege, and on the surface more ornate than the Edinburgh Castle. The Edinburgh Castle's emphasis on the use of nature and the ease with which it can be defended makes it a great advantage for its defensive function. Due to the frequent wars in history, architectural noumenon pays more attention to the use of the function.

3.2.2 Building Site Selection

Most of the buildings in Tibet are built on mountains, and the proportion of the plain is small. In order to avoid occupying limited arable land, most of the buildings in Tibet are built on mountains. The restriction of this environment makes Tibetan architecture different from the traditional axisymmetric layout. Located on the Maburi Mountain in Lhasa, Potala Palace's soaring rise helped create a sense of stately authority, keeping with the hierarchy promoted in Tibetan society at the time. The advantages of terrain add aesthetic value to Potala Palace with good aesthetic effect and consolidate

the defence system of Potala Palace with the help of a unique mountain environment. At the same time, the site selection of Potala Palace also follows the mainstream location selection principle in China: "The south of the mountain is the sun", which means that the interior space of the building needs more light and access to water [14]. According to the needs of the building, the combination of the natural scene of the mountain and the actual wall can be a better visual focus for people when they enter the Lhasa Plain. The building symbolized the Ruling class's control of Lhasa and became the city's centre [3].

The Edinburgh Castle puts more emphasis on military defense. After years of war, the Castle was built on top of a local extinct volcano and faced three cliffs, with only one slope to allow passage. The layout of the Castle is defined by the geography of its rocky foundations and can be roughly divided into four parts. The outermost area of the Castle includes the last part of the eastern ridge, the Castle Mountain, where the Royal Mile is located. It is also the only place with direct access to the peak of Castle Rock. Until the 18th century, the top of the ridge was widened into Esplanade. This level of open space creates a sense of physical separation between the town's buildings and the Castle's fortifications. In order to ensure the basic premise of traffic, the Castle can maximize the restrictions on the movement of the enemy to achieve a military strategy that is easy to defend challenging to attack. For this purpose, the builders chose to create a compact entrance area from Esplanade to the base of Castle Rock, which was designated as the second area of the Castle. From an early age, to improve the Castle's defensive and offensive capabilities, the third part of the area was surrounded by the wall with many military supplies of artillery. As well as containing a western rear entrance, this area provided a path to the back of the cliffs, opening military contacts within the Castle. The third constituent area also includes the western portion of Castle Rock, extending beyond the Portcullis Gate and below the Middle Ward, the highest of the central cliffs. The last section is the innermost part of the Castle, known as the Inner Ward, a raised platform of solid rock that currently has two entrances for military purposes [15].

3.2.3 Building Layout

Today, Potala Palace consists mainly of the White Palace, the Red Palace and the monk's quarters. Because the Potala Palace has been built many times in history, it has not been strictly laid out, so the building is asymmetrical to a self-organizing equilibrium. The BaiGong is called the White Palace because of its white walls. It has seven floors in all. The Daylight Hall on the top floor is divided into the western daylight hall and the Eastern Daylight Hall. Only senior monks and lay officials can enter the hall, a place where the Dalai Lama lives and conducts government affairs. The sixth and fifth floors are used for living and office accommodation. The fourth floor contains the main building of the white house, the Tibetan-named "Cuoqin Mansion", which is used by the local government for meaningful religious ceremonies and political events. Below the Palazzo Rosso and adjacent to the Zhaxia, the White Palace is generally considered a part of the White Palace because of its white walls and is usually a residence for monks. It can accommodate up to 25,000 people [16].

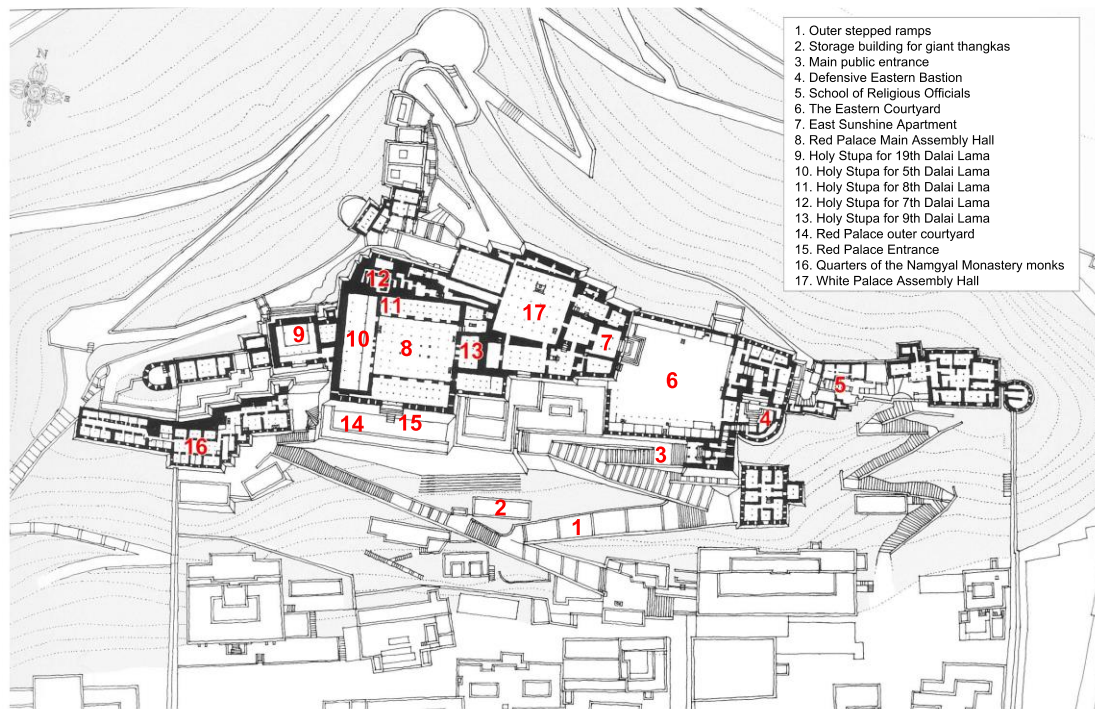


Figure 1: Potala Palace Layout plan (partial)

The Red Palace has nine floors above the White Palace, symbolizing the highest architectural level and functional level in the entire Potala Palace architectural system. The Red Palace comprises three parts: palace, Buddhist Hall and Pagoda Hall. The fifth floor of Xi You Ji YuanManHall (Cuqing Nu Si Ping Tso) is the largest hall in the Red Palace, including the fifth Dalai Lama's stupa. The Red Palace is another self-contained complex in Potala Palace. The pagoda hall in the palace is arranged in mandala and surrounded by various sutras and Buddhist halls. The oldest of these buildings are the Cave of The King of Dharma, also known as the Palace of Dharma Meditation (Qujie Zhepu or Qujie Zhupu) and the Temple of The Holy One (Papalakon). Those were used as songtsen Gampo's retreat in ancient times and now house statues of Songtsen Gampo, Princess Wencheng and ministers. The Red Palace and the White Palace each built a courtyard called the west courtyard, and the east courtyard, the west side of the courtyard, built Tasha.

Thus, the main structure of the Potala Palace, consisting of the Red Palace, the White Palace, the courtyard and the Tasha, was formed. As the height of the building rises, the outer outline of each floor becomes clear and changeable, symbolizing the contact between heaven and the gods in Tibetan religion. Inside Potala Palace, complex spaces are connected by tight lines to unify the building's floors and halls. At the same time, the interior space uses the change of light and shadow to form a unique, mysterious religious atmosphere and deepen the visitors' sense of faith.

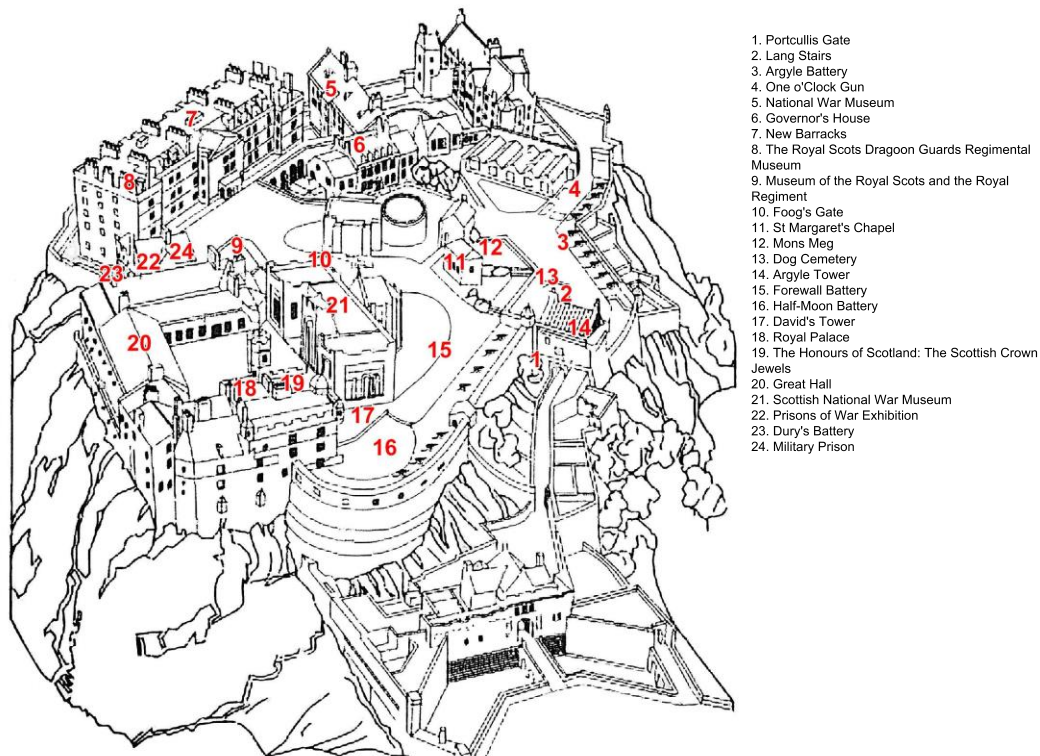


Figure 2: Edinburgh Castle Layout plan (partial)

Most of the buildings concentrated in the Inner Ward in the Edinburgh Castle are concentrated in the Inner Ward, which is divided into churches, military buildings and royal buildings. One of the most famous is St. Margaret's Chapel, built during the reign of Davy I. The church is one of the last remaining 12th century buildings in a Scottish castle and has been described as the smallest and oldest church in Edinburgh. Within The castle walls were Governor's House (1742) and The New Barracks (1799), which were initially used as residences for Governors, storekeepers and gunners. It was used in the staff canteen and the Governor's office until 1936 when he was reinstated. The National War Museum of Scotland, formerly an Arsenal built from 1747 to 1748, was renamed the National War Museum in 2000.

Crown Square, also known as the Palace Yard, comprises the Royal Palace, the Great Hall, the Queen Anne Building, and the National War Memorial. The royal palace to the east was used mainly as a residence for the kings and Queens of the time and as a registry for the state archives. Along with the Royal Palace, the royal family now displays three treasures of the Scottish Crown: The Crown, the sceptre, and the sword. The Great Hall, south of Crown Square, was built in James IV of Scotland for national celebrations and conferences and was later converted into a barracks. To the west, the Queen Anne Building served as a kitchen for the general assembly hall around the 16th century and later as a warehouse for the Royal Gun Tower. After this, it was also used as a place of employment and accommodation for officers. It was converted into the Navy and military museum in the 1920s and is now used as a function suite and education centre.

Due to religious and political factors, both the Edinburgh Castle and the Potala Palace have adopted the form of religion and politics to construct the interior layout of the building. Nevertheless, in the details of the layout, the architecture of Potala Palace tends to show the control of religion and the power of the crown. Moreover, the overall building is not very much changed. However, the architecture of the Edinburgh Castle is more fragmented, with frequent restoration and renovation of

buildings as a result of years of war, and the function of the building will change with the historical military situation.

The layout of the Potala Palace is a multi-storey building complex, with a mandala-like layout surrounding the main building and a clear hierarchy corresponding to the hierarchy of the monks. In order to understand the layout of the building more quickly, 3D model animation will be easier to understand. However, in the case of Edinburgh Castle, the buildings are built one by one, so people can understand the layout of the castle in 3D.

3.2.4 Building Materials

Due to the harsh environment and lack of resources in Tibet, the local buildings are mostly made of local materials, and stone and clay are the primary building materials. The Potala Palace uses wood and stone structures. The palace wall is made of granite, tens of meters high. Iron juice is poured into the middle every distance, which ensures the anti-seismic ability of the wall and strengthens the wall and enhances the stability of the building. The current research finds that the wood of most Tibetan buildings is Tibetan poplar, plateau pine, silver fir, Tibetan cypress and so on [16].

In addition, there are two unique building materials produced in Tibet: Baima grass and Aga. Among them is Baima grass, a strange willow tree unique to Tibet that has been dried and woven, nailed to the outer edge of the eaves and painted, and used under the daughter walls of Potala Palace and the eaves of all temples, palaces and castles. Although the value of Baima grass itself is not high, the production process is complex, and the cost of the production increases significantly due to the low reuse rate. Ordinary Tibetan architecture is not used, reflecting the old Tibet from the other side of the strict social hierarchy. Aga is a kind of weathered fossil, which can be smashed and paved before being refuelled for protection. In order to protect ground, the monks in the palace would rub the ground with sheepskins all year round. Over time, the ground became smooth. The application of unique materials also reflects the respect and understanding of nature in Tibetan culture, so the relationship between the natural environment and practical use can be considered in the construction of buildings to achieve an idea of the unity of man and nature.

The foundation of the Edinburgh Castle, commonly known as Castle Rock, is essentially an extinct volcano, and most of the minerals are made of a rock called basalt. According to the historical record of the time, most of Edinburgh's buildings were made of sandstone, and the castle was made of suitable sandstone. In addition, most of the materials used to build the castle are made of local materials to form the wooden and stone structures now visible to visitors. At the same time, for the later stages of the war, the castle was paved with cobblestones to make it easier for the big guns to move and save time [17].

3.2.5 Architectural Appearance

The facade of Potala Palace is designed to serve the spread of religion. For a long time, the development and evolution of Tibetan architecture have been due to the geographical location, natural environment, religion and national customs, making Potala Palace itself have a solid national characteristic. In Potala Palace, colour is one of the most representative architectural expressions. Colour means a strong impact and the most intuitive impression in various visual elements. With the development of primitive society in Tibet, the concept of God has been generalized into the religious concept of "Bon", in which the world is divided into three parts: Man, God and Ghost. White represents the sky, yellow the air, red the surface of the Earth, blue or black the Earth. Until the introduction of Buddhism, the local religion and Buddhism had a struggle and integration, forming very national characteristics of Tibetan Buddhism and a new interpretation of the colour. White stands for peace and moderation; yellow for growth and development; red for authority and inclusion; Black

or blue for evil and concealment. On the external walls of Potala Palace buildings, a great deal of white is used to decorate the buildings. Yellow means a class division, ordinary Tibetan residents are not eligible to wear yellow clothes, and yellow often appears in some significant buildings, a symbol of the high status of the class. During the religious concept of "Bon", red was seen as a symbol of banishing evil spirits and avoiding disasters until the introduction of Buddhism. This tradition has been preserved in architecture. In the early days of Tibetan Buddhism, red meant an extraordinary state of mind. The typical colour used by eminent monks and temples was red, and the Red Palace was the most typical case in which red was used, located in the heart of Potala Palace. It visually distinguishes the Dalai Lama from the rest of Tibetan Buddhism, the highest level of religious symbolism. Although Black has an ominous meaning, it means exorcism and disaster avoidance in Tibetan architecture. Because in architecture, Black means "guidance", so black door frames and window frames often appear in some of the building's decoration and with the surrounding white fence to form a strong sense of contrast [18].

Compared with Potala Palace's emphasis on colour, the buildings of Edinburgh Castle are more varied and frequently rebuilt. Edinburgh Castle is a vast and complex of buildings spanning nearly 1,000 years of history, with buildings and military defences, most of which have undergone extensive alterations and functional changes to adapt to the changes in history.

At first, "Edinburgh" on the castle rock was just a few dwellings. Early people called Edinburgh Castle simply Edinburgh because Edinburgh itself meant castle. Nevertheless, as the population grew and the royal family intervened, the size and shape of the area changed. The development of class concepts meant that the functions of the dominions changed from residential areas to castles containing military operations and urban areas. The name castle was added to Edinburgh to distinguish between the two. This name also shows the difference between the royal family and ordinary people. Furthermore, it is a symbol of the imperial class at that time.

In 1128, David I established the Abbey of Holyrood for the royal service, and St. Margaret's Chapel was built around this time. St. Margaret's Chapel runs along an east-west axis and is built on an exposed stone, with traces of stone and ornamentation on its exterior, indicating numerous restorations and reconstructions throughout its history. Well into the sixteenth century, the church maintained its original function. However, by about the seventeenth century, the frequent use of hot weapons such as guns and ammunition in war and the two great sieges of 1573 and 1689. Both of which were the causes of military struggle. Both were indirectly influential in St. Margaret's Chapel as a supply depot for artillery. It was not until 1845, when Daniel Wilson confirmed the church's identity, that St. Margaret's Chapel was gradually restored and became the spiritual symbol of Edinburgh Castle. St. Margaret's Chapel is probably one of the few intact examples of early Romanesque architecture in Scotland, shaped by a long history and war to form tangible and intangible cultural heritage values, as well as a complex identity endowed with religious and cultural symbols [16].

Another well-known building is The Great Hall, which has an exterior area of about 29 by 12.5 meters because of its preserved hammer-beam roof, so it is one of the only two late medieval roofs left in Scotland. The engineer was Thomas Kincaid, and the roof could be a work of John Drummond. The roof's stone console brackets have carved Italian Renaissance images, making it one of the earliest examples of Italian style in the area. During Oliver Cromwell's visit to 1650, The Great Hall was converted into a six-room, three-story military hospital with more than 300 people. It was not until 1887 that The Great Hall was restored by the architect Hippolyte Jean Blanc. Some of its interiors remain to this day: Late Gothic panelling, a western screen based on the choir seats of The King's College at choir stalls of King's College Chapel, floors, a large stone mantelpiece on the east wall of The Hall of Borthwick's fireplace, and stained glass. These decorations enhance the service life of the building because famous architects restore them. Their historical traces give the castle a

very high artistic and scientific value. Blanc's restored Great Hall is replete with Victorian interior design. Since the Second World War, the Great Hall has been used for state banquets and other government functions.

Due to the different design concepts of the two buildings, the emphasis on the appearance is different, and the first impression on the appearance of the two buildings is different. Potala Palace tends to be more visual in terms of colour, and the use of architectural elements serves religious and imperial purposes. Most decorative elements represent a religious concept and symbolise the people's class. Different status classes have matching colours and decorations. This, in turn, is consistent with the dominant culture's notion of class, which seeks to reinforce the royal family's image as a people who revere power and obey it. The exterior and interior style of Potala Palace shows a belief in religion and gives more of a sense of holiness. Edinburgh, on the other hand, has a more military feel. The building materials used are measures to strengthen the defence and reinforce the building. Although there is no strong contrast in the appearance of stone and other building materials, the purpose of the building is to resist foreign enemies, which also reflects the frequency of wars at that time from the side. The castle is decorated in various styles, from Italian Renaissance to Victorian, reflecting the many alterations and renovations that have taken place, so the appearance is proved in the sense of history and military.

4. Conclusion

National architecture is the product of national culture. As a resource of local culture, it is endowed with exceptional cultural and aesthetic value. The national characteristics of Potala Palace architecture are mainly manifested in its religion and internal function. Moreover, at the same time, through all artistic means, to create a complete image of architectural art to ensure that the architectural embodiment of the spiritual realm and religious thinking is highly consistent. The Edinburgh Castle, on the other hand, uses history to leave its traces of Scottish architecture, with historical military and war as the main themes around the castle. As one of the tools used to consolidate the stability of the imperial power, win the hearts and minds of the people, and carry forward the religious ideas, architecture itself has an extraordinary status. The Edinburgh Castle also served as a symbol of imperial stability, but its focus was on the military and war, primarily as a symbol of the city. However, local culture and national architectural elements will build a more conceptual cultural space after integrating modern architectural space theory. In the later research, expanding the space culture in national architecture will help construct the modern and characteristic architectural space theory.

This article is only a comparison of some of the two architectural elements. Due to the lack of some historical data, this study has some limitations in depth and breadth. In the later research, expanding the space culture in national architecture will help construct the modern and characteristic architectural space theory.

Reference

- [1] Zhao, Z.Q. and Tao, L. (2014). *Differences of Philosophy and Culture between Chinese and Western Reflected in Construction*. *Advanced Materials Research*, 953-954(1533-1536), pp.1533–1536.
- [2] Mu, K., Zhang, C. and Ji, J. (2020). *Comparative study on characteristics and development of Chinese and western architectural culture*. *Journal of Architectural Research and Development*, 4(2).
- [3] Zhu, Y. (2014). *Architectural Art of Potala Palace*. [online] www.cnki.com.cn. Available at: <https://www.cnki.com.cn/Article/CJFDTOTAL-JZSX201430010.htm>.
- [4] Oram, R. (2008). *Castles, Concepts and Contexts: Castle Studies in Scotland in Retrospect and Prospect*. [online] Available at: <https://dspace.stir.ac.uk/bitstream/1893/3229/1/Castles%2017-01-07.pdf> [Accessed 1 Nov. 2021].
- [5] *Historic Environment Scotland* (2020). *Conserving an Icon: Edinburgh Castle*. YouTube. Available at: <https://www.youtube.com/watch?v=53jw5Ctb-Yg>.

- [6] Hodge, A. (2019). *The Medieval Documents*, Historic Environment Scotland, HES. [online] www.historicenvironment.scot. Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=41613211-710f-4197-a087-aae700b49d71> [Accessed 1 Nov. 2021].
- [7] Caldwell, D. (2018). *Edinburgh Castle's Role as a Gun House*, Historic Environment Scotland. [online] www.historicenvironment.scot. Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=6954070f-2dca-4776-af22-a93f00a5e64e> [Accessed 1 Nov. 2021].
- [8] www.potalapalace.cn. (n.d.). Potala Palace official website. [online] Available at: <http://www.potalapalace.cn/home.html> [Accessed 16 Feb. 2022].
- [9] Wang, Q. (2012). Trace back the name of Potala Palace. *Inheritance*, 06, 82–83.
- [10] Qiang, E. and Wang, Q. (2012). On the building scale of the Potala Palace during the Tubo Period. *Journal of Xizang University (Social Sciences Edition)*, 27(02), 86–90.
- [11] Guo, H. (2001). *Forbidden City & Chateau De Versailles —Comparative Research of Palaces under Absolute Authority in Eastern and Western Systems--* 《Huazhong Architecture》. [online] en.cnki.com.cn. Available at: https://en.cnki.com.cn/Article_en/CJFDTotat-HZJZ200101013.htm.
- [12] Li, L., Zhang, F. and Gong, Q. (2003). The Spatial organization of Chinese and Western ancient architecture under the influence of Religion. *Furniture and interior decoration*, 10(10), .24–27.
- [13] Huang, X. (2003). A comparative study of cultural differences between Chinese and Western architecture. *Huazhong architecture*, 05(05), 35–37.
- [14] Deng, Z. and He, Y. (2014). On the influence of plateau environment, ethnic characteristics and religious belief on Tibetan urban architecture. *Journal of Sichuan University (Philosophy and Social Sciences Edition)*, 3(03), 37–44.
- [15] www.youtube.com. (2020). *Edinburgh Castle History | Edinburgh, Scotland | 4K*. [online] Available at: <https://www.youtube.com/watch?v=7WoCyufBDrA> [Accessed 1 Nov. 2021].
- [16] [Historicenvironment.scot](http://www.historicenvironment.scot). (2019). *Historic Environment Scotland*. [online] Available at: <https://www.historicenvironment.scot/>.
- [17] Quzhajiangcuo and Zerenyuzhen (2012). Structural characteristics of Tibetan ancient buildings and lightning protection measures. [online] *Chinese Journal Full-text Database*. Available at: <http://61.186.207.3/KCMS/detail/detail.aspx?filename=XZYJ201203012&dbcode=CJFD&dbname=CJFD2012> [Accessed 14 Dec. 2021].
- [18] Yue Shang (2020). *The Religious Connotation and Aesthetic Studying of the Color in Tibetan Architecture*. *Open Journal of Social Sciences*, [online] 8(4). Available at: <https://www.scirp.org/Journal/paperinformation.aspx?paperid=99674>.