

## **The Art of Interior Layout Design in Chinese Museums: An Exploration with Typical Cases**

Haoyuan Xu<sup>1</sup>, Mohd Jaki Mamat<sup>2</sup>

### **Abstract**

*This research examines the field of interior design in Chinese museums, specifically focusing on a selection of typical museums located in Beijing, Tianjin, Hebei, Nanjing, Hunan, Shanghai, Guizhou, Shaanxi, and other locations. The study elucidates three fundamental concepts of interior design, namely utility, visitor flow, and adaptability. These principles serve to facilitate seamless exhibition presentations, enhance visitor comfort and safety, and cater to the evolving requirements of both permanent temporary exhibitions. A recommended practical design guideline is presented by conducting case studies of representative museums from various regions, supplemented by comprehensive strategic debates. The objective of this study is to provide a novel viewpoint and a useful resource for the interior design of Chinese museums, while simultaneously addressing the existing design issues and future potential. The research highlights the significance of effectively integrating technology with cultural elements, encompassing both traditional and modern aspects.*

**Keywords:** *Layout Planning, Chinese Museums, Layout Strategies.*

### **1. INTRODUCTION**

In recent years, museums have evolved from simple storage spaces to dynamic institutions that promote learning, engagement, and immersive experiences in history and culture (Latham & Simmons, 2014). In this dynamic and ever-changing situation, interior design is crucial since it affects visitor experience and cultural property preservation and exhibition (Roppola, 2013). China has several museums due to its rich history and culture. Museums in Beijing, Tianjin, Hebei, Nanjing, Hunan, Shanghai, Guizhou, and Shaanxi offer unique interior layouts that attract domestic and foreign visitors.

This study examines Chinese museum interior design, focusing on arrangement methods. This study examines important museums from the above regions to understand Chinese museum interior design. Our study provides important insights for museum design and strategy in China.

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<sup>1</sup> School of Housing, Building and Planning, Universiti Sains Malaysia, 11800, Pulau Pinang Malaysia, xuhaoyuan@student.usm.my

<sup>2</sup> School of Housing, Building and Planning, Universiti Sains Malaysia, 11800, Pulau Pinang Malaysia

## 2. RESEARCH BACKGROUND

China possesses a deep-rooted historical background and a significant cultural legacy, rendering its museums not just as storage spaces for antiquities but also as portals that offer insights into the intricate fabric of historical culture and traditions (Yang, 2013). In recent decades, the construction and expansion of museums have experienced remarkable prosperity due to fast social and economic development.

### 2.1 Overview of Interior Layout Design in Chinese Museums

Chinese museums have grown from simple item exhibitions to comprehensive, all-encompassing cultural entities. Early museums focused on cultural artifact conservation and presentation, relying on government financing and administration. With the rise of privately funded and corporate-sponsored museums, several management approaches have emerged (Wei, 2016).

Interior layout design at museums, especially for spatial planning, is becoming increasingly important. Effective museum interior design improves visitor experience and cultural asset preservation and presentation (Cassar, 2013). Additionally, this design concept fits museum space practical needs (Lord & Piacente, 2014).

Critical aspects of Chinese museums' expansion have been uncovered by theoretical studies. Museum interior designers and administrators in China aim to incorporate cultural themes (Xu, 2007). These designs generally reflect Chinese cultural heritage by being deeply rooted in local culture and history.

Guest experience is also being prioritized. Modern museum designs emphasize visitor interaction and immersive features.

Additionally, Chinese museums are using technology into their art (Qing, 2020). Technology has enabled museums to use digital displays, virtual reality, and other technologies to create more immersive exhibitions.

Chinese museums and their interior architecture demonstrate a nation's growth in history, culture, technology, and economy. In this framework, interior design links tradition to future discovery and innovation (Gaitán Salvatella et al., 2023).

### 2.2 Classification and Representative Chinese Museums

Chinese museums thrive due to the country's rich history and culture and its devotion to intellectual exploration (Wen, 2021). Museums now connect historical items to modern art, natural events, and technological progress. They bridge academic research and the public.

Historical museums like the Palace Museum and Shaanxi History Museum display and preserve China's thousands-year-old culture. Museums are more than storage facilities; they are primary sources of historical occurrences. These museums carefully create exhibitions of ancient life, dynastic transitions, and cultural achievements (Kirshenblatt-Gimblett, 1998).

In contrast, art museums focus on artistic output and aesthetic experiences (Kindler, 1997). For instance, the Shanghai Museum is known for its enormous collection of artworks from various historical periods and cultures. These museums offer a thorough look at antique bronzes and modern artworks.

Due to their large natural science collections and excellent presentation methods, science museums like the Tianjin Natural History Museum attract many young people. The organization uses AR and VR to give guests interactive and educational experiences.

Eight regional Chinese museums were chosen for this investigation. These museums illustrate the variety of museums in different regions and demonstrate the nation's

commitment to cultural preservation. Every museum has different exhibiting methods and beliefs, offering the public a variety of intellectual and creative experiences.

Each Chinese region's museums showcase its beauty and depth to the world. These museums cover Beijing's royal culture, Manchu history, Guizhou's ethnic diversity, Hebei's ancient civilizations, and Nanjing's historical changes. Museums are more than knowledge repositories; they connect cultures and histories. These institutions help domestic and international visitors understand China by showcasing its rich legacy(Lin, 2013).

#### A. Beijing: The Palace Museum

The Palace Museum, situated in the central region of Beijing, served as the primary residence of the royal family during the Ming and Qing eras(Li, 2020). Furthermore, it can be said that this architectural complex is unparalleled in terms of its exceptional preservation among ancient imperial structures worldwide. The spatial arrangement of the structure incorporates both interior and outdoor elements, adhering to the architectural and urban planning ideas that were prevalent in ancient China. The primary palaces and accompanying structures situated along the center axis serve to underscore the paramount importance of imperial authority. The architectural design of each building and courtyard is meticulously crafted to align with its intended purpose and hierarchical significance, resulting in a structured yet cohesive physical arrangement. Moreover, the precise design of exhibition halls and the presentation of exhibits within the Palace Museum facilitate a comprehensive experience for visitors, enabling them to immerse themselves in the ambiance of old royal life and authority, while also fostering a deeper comprehension and admiration for its historical relics(Hongyang et al., 2005).

#### B. Tianjin: Tianjin Natural History Museum

The Tianjin Natural History Museum, situated in the Hexi District of Tianjin, is a prominent and all-encompassing natural history museum that serves as a representative institution in the northern region of China(Jingyun et al., 2004). The museum showcases a wide array of displays encompassing multiple disciplines, such as paleontology, minerals and rocks, biodiversity, and other subjects(Jingyun et al., 2004). Its collection comprises about 200,000 pieces in total. The museum adeptly integrates contemporary design features with traditional cultural aspects, so facilitating the seamless display of exhibits and creating an enjoyable visitor encounter in relation to spatial arrangement and design. The exhibition halls are designed with a clear and logical flow, enabling visitors to go through them in a structured manner. This design ensures that each exhibit is presented in an appropriate display space and setting, enhancing the overall tourist experience.

#### C. Hebei: Hebei Provincial Museum

The Hebei Provincial Museum, located in the city of Shijiazhuang, functions as a prominent hub for cultural and historical studies within the province of Hebei. The museum, which was founded in 1953, contains a wide-ranging assortment of historical items, artworks, and archaeological discoveries that collectively represent the abundant and varied history and culture of Hebei(Fang & Yimo, 2010). The Hebei Provincial Museum effectively achieves a harmonious integration of display and public service functions within its space structure. The strategic layout of exhibition galleries and the thoughtful flow design facilitate visitors to engage with the history and culture of Hebei in a systematic manner, taking into account both the enjoyment of viewing and the preservation requirements of the exhibits. In addition to its exhibits, the museum offers versatile spaces and educational activity areas, so enhancing the public's access to interactive experiences and educational opportunities.

#### D. Nanjing: Nanjing Museum

The Nanjing Museum, situated on Zhongshan East Road in Nanjing City, stands as one of China's earliest and most prominent national museums. The establishment functions as a pivotal hub for cultural and historical studies within the province of Jiangsu. Since its establishment in 1933, the museum has amassed a significant assortment of valuable antiques, artworks, and archaeological materials (Ting, 2008). The collection is notably notable for its abundance of Ming and Qing items, as well as its extensive representation of traditional Jiangnan art. The Nanjing Museum adeptly incorporates both traditional and modern design features within its physical plan. The exhibition halls are designed in a manner that highlights the thematic and narrative elements of the exhibits, allowing visitors to systematically engage with the cultural heritage of many historical epochs. Furthermore, the flow design of the space takes into account both visitor comfort and traffic efficiency. This enables the logical presentation of a substantial number of exhibits within the constraints of restricted space, while simultaneously creating a vast and comfortable setting for the public to visit.

#### E. Hunan: Hunan Provincial Museum

The Hunan Provincial Museum is located in the city of Changsha and serves as the primary hub for historical and artistic studies in the Hunan province (Liang, 2005). The organization is widely recognized for its extensive collections and thematic exhibitions, making it a prominent establishment dedicated to the acquisition, investigation, and presentation of cultural artifacts in the province of Hunan. The museum engages in proactive exploration of novel exhibiting methodologies in order to optimize the overall visitor experience. The institution contains a significant assemblage of historical items, with a special focus on the archaeological findings from the Mawangdui site from the Han Dynasty. The spatial arrangement of Hunan Provincial Museum prioritizes the logical and narrative exhibition of cultural artifacts, effectively guiding visitors through a chronological progression of historical development. The architecture of the exhibit ensures that visitors can gain a full understanding of the history and culture of Hunan within a minimal timeframe, thanks to its clear and well-structured flow.

#### F. Shanghai: Shanghai Museum

The Shanghai Museum is situated in the prominent People's Square, which serves as the central hub of Shanghai. Renowned as a highly emblematic contemporary museum in China, it showcases a comprehensive collection of artifacts and exhibits that reflect the nation's rich cultural heritage (Fang, 1998). The museum's collections encompass a diverse range of historical epochs, with notable focus on ancient bronzes, pottery, calligraphy, and jade artifacts. The Shanghai Museum employs a radial design in its spatial arrangement, which effectively draws a substantial number of people to each exhibition hall and facilitates the movement of foot traffic. Furthermore, the museum's versatile spaces and educational activity areas provide the general audience with immersive and engaging experiences. The institution is renowned for its state-of-the-art exhibition facilities and extensive range of collections, effectively incorporating both classic and contemporary components.

#### G. Guizhou: Guizhou Provincial Museum

The Guizhou Provincial Museum, situated in the city of Guiyang, functions as a key hub for cultural research and exhibition within the province. The museum holds great importance within the southwestern region of China. The museum places a significant emphasis on showcasing the exhibition of Guizhou's diverse cultural heritage and historical significance. It prominently displays a wide array of valuable items that are intricately linked to the ethnic minorities of the region (Huanqiang, 2021). The Guizhou Provincial Museum endeavors to seamlessly include and exhibit the cultural attributes of diverse ethnic communities in Guizhou within its spatial arrangement. Additionally, the

museum lays significant importance on fostering interactivity and incorporating immersive components into its exhibitions. This approach aims to facilitate visitors in acquiring a profound comprehension of the rich and varied cultural heritage of Guizhou. The institution is widely recognized for its exceptional assemblage of cultural items from various ethnic minority groups, as well as its comprehensive displays pertaining to natural history. The museum aims to exhibit the allure of Guizhou's eclectic past and offers visitors an opportunity to delve into a wide range of cultural traditions.

#### H. Shaanxi: Shaanxi History Museum

The Shaanxi History Museum, situated in the city of Xi'an, serves as the primary hub for cultural and historical studies in the Shaanxi region. Additionally, the museum holds the distinction of being the most expansive institution of its kind in the northwestern region of China (Zhifeng, 1991). Its extensive collection is notably renowned for its abundance of valuable relics pertaining to the historical Silk Road and the illustrious Tang and Han periods. The museum places significant emphasis on the physical arrangement and design to effectively convey the chronological and narrative logic of its exhibitions. This approach ensures that artifacts are presented in a manner that aligns with their respective historical contexts. Furthermore, the flow design of the exhibit intends to facilitate a seamless and logical visitor experience, enabling visitors to comprehensively grasp the profound historical and cultural heritage of Shaanxi. The exhibition highlights the significant historical and cultural accomplishments of the Shaanxi area. The architectural composition of the museum effectively combines traditional and contemporary features, providing visitors with a comprehensive perspective on the rich tapestry of historical and cultural legacy.

These museums not only serve as microcosms that exhibit the historical and cultural richness of their various regions, but they also exemplify methods of museum growth in China (Wang, 2015). By engaging in an examination of these museums, a more profound comprehension of the distinctive attributes and evolutionary patterns of Chinese museums can be attained.

### 3. METHOD

**Literature Review:** At the outset, an extensive literature review was conducted, exploring the interior design of museums across China, their background, and characteristics (Papaioannou et al., 2016). Special attention was paid to literature associated with the interior and spatial layout design of museums, laying a theoretical foundation for the research.

**Case Studies:** Typical museums located in Beijing, Tianjin, Hebei, Nanjing, Hunan, Shanghai, Guizhou, and Shaanxi were selected for case study analysis. By meticulously examining the spatial layout designs of these museums, design principles and features were summarized, revealing both commonalities and differences.

**Design Strategy Discussion:** Based on the analysis from the previous case studies, a series of design strategies were proposed, such as the integration of tradition with modernity, emphasizing harmony with nature, and creating rich spatial sequences and layers. Each strategy was elaborated upon in detail, discussing its practical application in design.

**Strategy Implementation & Validation:** The feasibility and effectiveness of the previously introduced design strategies were validated by assessing their application in actual museum settings. By comparing the designs of different museums, general conclusions were drawn (Zhang & Liu, 2021).

**Comprehensive Analysis:** At the conclusion of the study, an all-inclusive analysis was undertaken, summarizing the primary discoveries and conclusions of the research.

Simultaneously, recommendations and suggestions were made, offering a novel perspective and valuable resource for the interior design of Chinese museums.

The aim of this research is to provide a fresh perspective and valuable resources, assisting designers and researchers in better understanding and applying these strategies(Xiaoming, 2022), leading to enhanced outcomes in actual designs.

#### Flexibility of Space

Consider permanent and temporary exhibition needs as they change(Lord & Piacente, 2014). Museums frequently host new exhibitions and events, requiring flexible interior design. Modular design must be stressed first(Ghouaiel et al., 2017). Modular rooms use interchangeable display panels, exhibits, and other pieces for quick changes. Certain places can be built as multipurpose spaces for exhibitions, presentations, and events.

To support new exhibitions or activities, power outlets, data interfaces, and other infrastructure must be provided. Temporary shows require proper exhibit storage and transportation(Lord & Piacente, 2014).

In summary, Chinese museum interior layout planning focuses on facilitating successful exhibition presentation, providing visitors with a comfortable and secure experience, and meeting these institutions' short- and long-term needs.

## 4. MUSEUM INTERIOR DESIGN CASE ANALYSIS

Many Chinese museums have interesting interiors. Eight typical Chinese regions' museum interior designs are analyzed here.

Figure 1 shows Palace Museum (a) floor plan. Its layout blends tradition and contemporary. As the world's largest wooden structure complex, the Palace Museum's exhibition hall design honors history while displaying valuable objects with modern technology.

The Meridian Gate, Hall of Supreme Harmony, Hall of Central Harmony, Hall of Preserving Harmony, and Palace of Heavenly Purity are political and ceremonial venues in the spatial plan design from south to north. These locations emphasize the emperor's power. The Palace Museum's flow design emphasizes seamless circulation and dispersion to accommodate the enormous number of visitors.

Eastern and Western Auxiliary Palaces house court activities and royal palaces on either side of the main axis. The Eastern Six Palaces housed the empress and concubines, while the Western Six Palaces held other consorts and noblewomen. After the Palace of Heavenly Purity, Hall of Earthly Tranquility, and Imperial Bedchamber, empresses and concubines have a discreet space.

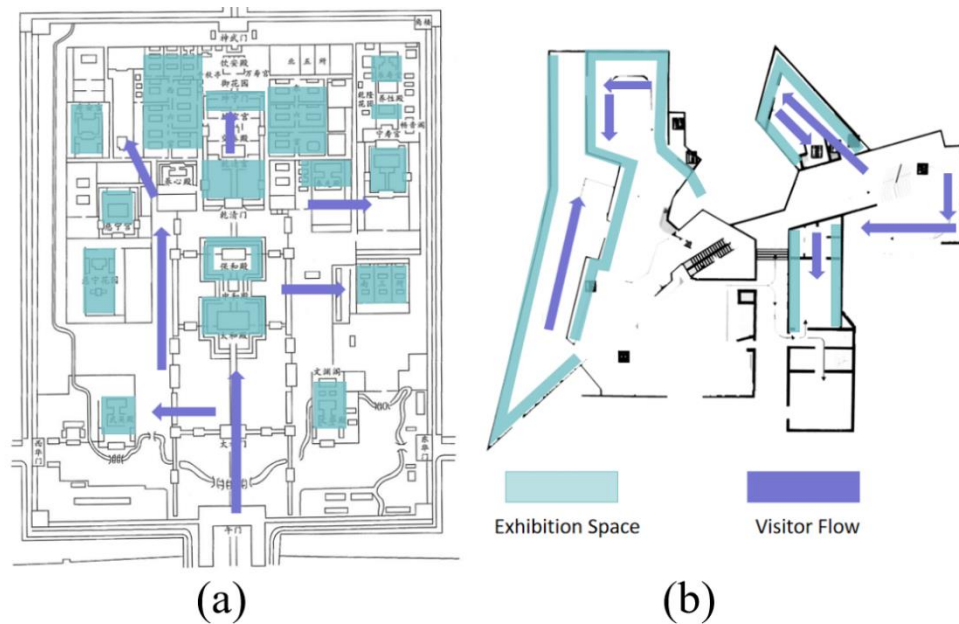


Figure 1: Floor Plan and Circulation of Representative Museums in Beijing and Guizhou, Source: Author

Figure 1 shows the Guizhou Provincial Museum (b)'s spatial organization and design, which supports the main idea. The Guizhou Provincial Museum's meticulous organization and hierarchical structure are instantly noticeable. Some display halls are not chronologically ordered. The displays focus on Guizhou's nature, history, and ethnic culture. These collections are seamlessly blended to show Guizhou in all its facets.

The Guizhou ethnic culture display is remarkable. The museum effectively displays Guizhou's ethnic diversity and traditional crafts. The exhibition hall's layout simulates ethnic groups' homes, giving visitors a unique glimpse into their cultures.

The Guizhou Provincial Museum has incorporated several modern elements into its architecture to better serve modern visitors. Several exhibition halls have interactive touch displays and virtual reality technologies to help visitors understand the artifact narratives more easily. The museum also has dedicated educational activity rooms and resting facilities to make visiting easier for the public.

Through spatial organization and design, the Guizhou Provincial Museum integrates Guizhou's historical, natural, and ethnic cultures, giving visitors a complete and full cultural experience.

Figure 2 shows the linear floor plan of the Hebei Provincial Museum (a), which allows visitors to gradually explore Hebei's history and culture. This order is chronological and thematic. The main exhibition halls showcase Hebei's history and culture. Regionally significant archaeological finds, artistic works, and local customs are displayed in other exhibition areas.

Modern museums have lecture halls and interactive experience zones to meet the needs of different groups and fulfill their instructional and interactive functions. The museum has rest places, a library, a café, and other amenities to make guests' stay pleasant and encourage cultural exchange. Some exhibition halls are purposefully flexible to facilitate show-specific alterations and modifications.

The Hebei Provincial Museum's physical organization and design blend traditional cultural exhibitions with modern interactive experiences, giving visitors a complete and fascinating look at Hebei's history and culture.





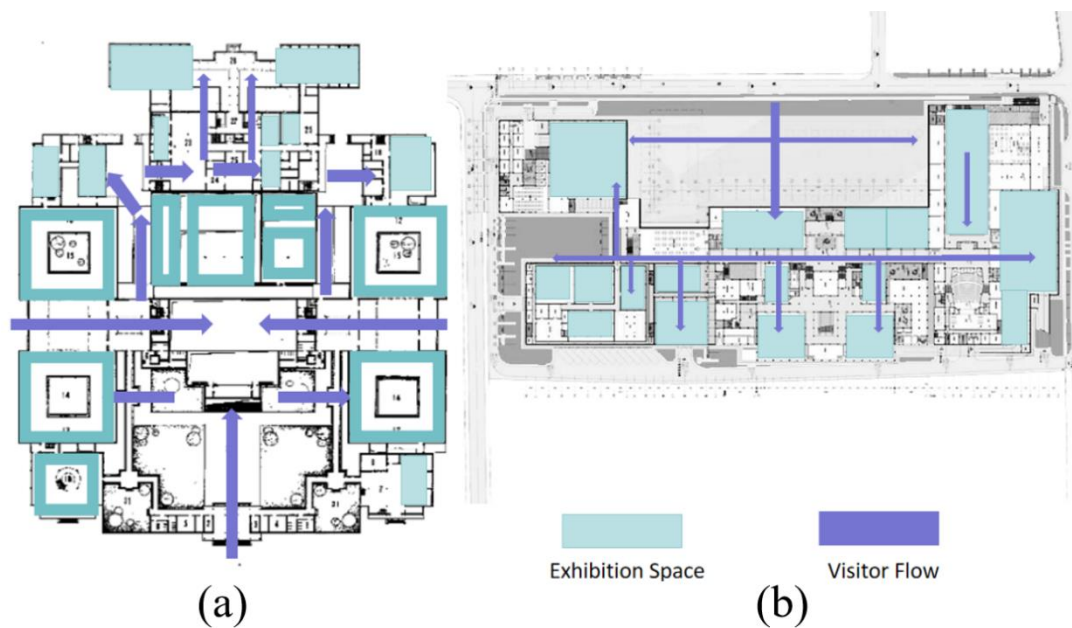


Figure 3: Floor Plan and Circulation of Representative Museums in Shaanxi and Nanjing, Source: Author

Figure 3 (b) shows the Nanjing Museum's main exhibition hall ordered chronologically. This arrangement lets visitors follow a linear timeline through Nanjing and Jiangnan's history and culture. In addition to the historical chronology exhibit, the museum has bronze, porcelain, and folk heritage departments. These areas highlight the region's culture and the museum's collection. The museum's main exhibition hall often features notable artefacts, drawing visitors in and improving the presentation.

The Nanjing Museum encourages modern visitor engagement. Interactive displays, such as virtual renderings of ancient life scenes and electronic touch screen elucidations, have been added to specific exhibition areas to increase visitor engagement. Flexible display halls allow the museum to adapt exhibition layouts for special exhibitions and worldwide cultural exchanges. The exhibition halls have a library, a flexible lecture hall, and an educational activity space to meet the intellectual and educational needs of scholars and the public.

The Nanjing Museum's layout blends traditional cultural presentation with modern interactive activities, creating a holistic cultural excursion that meets visitors' different interests and preferences.

As seen in Figure 4 (a), the Hunan Provincial Museum's architecture carefully displays Hunan culture. Its collection of cultural objects and purposeful space design and layout achieve this.

Visitors to the Hunan Museum are greeted by a bright, open foyer. This atmosphere encourages visitors to explore the museum's varied exhibition rooms. The museum's exhibits are chronological and thematic, allowing visitors to explore different periods and topics. From ancient Yueyang Academy to modern Hunan craftsmanship, this arrangement creates a continuous journey through time and themes.

The Hunan Museum's layout prioritizes practicality and engagement to enhance visitors' experiences. Interactive zones in some exhibition areas allow visitors to participate in virtual depictions of ancient living or craft activities. This lets kids appreciate valuables and connect with historical culture.

The Hunan Museum's layout considers potential growth. Some areas are designed to be reconfigurable to accommodate new exhibitions or meet artifact display requirements. The museum's flexibility allows it to evolve and innovate while retaining its cultural and educational values.

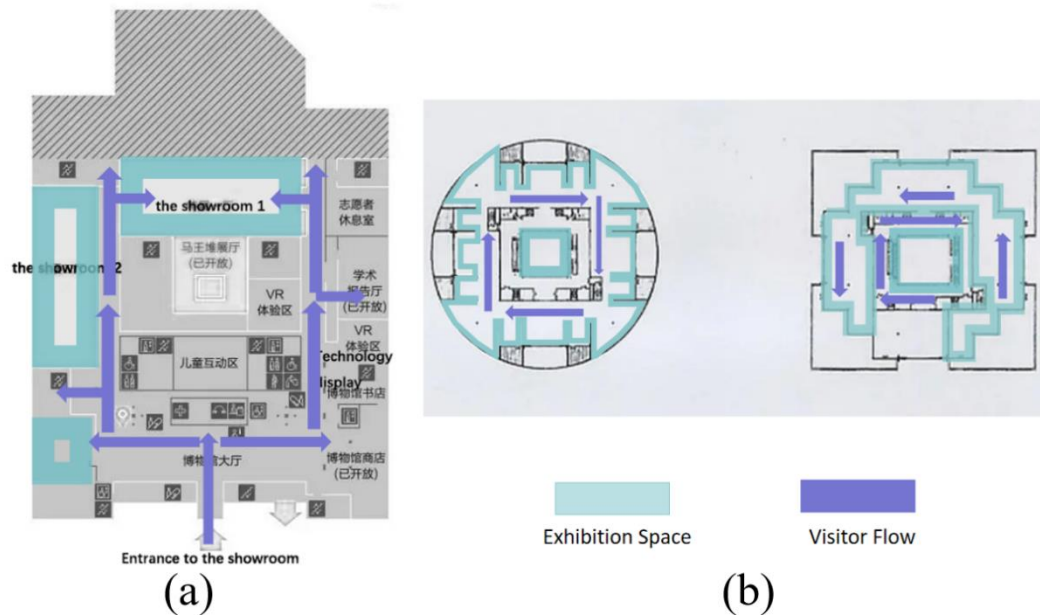


Figure 4: Floor Plan and Circulation of Representative Museums in Hunan and Shanghai, Source: Author

Figure 4 (b) shows the Shanghai Museum's primary, symmetrical floor plan. This design helps visitors intuitively understand the spatial orientation of display rooms when entering the main hall. Ancient bronzes, ceramics, traditional Chinese art, and calligraphy are displayed in the main exhibition halls on various levels. The layout lets visitors choose their interests or self-guide through the museum. The main exhibition hall on the central axis displays significant and iconic artifacts and is a focal point of museum visits.

In addition, the Shanghai Museum purposefully features open resting rooms and interactive zones. These facilities soothe visitors and enhance their museum experience. Certain interactive displays use technology to increase visitors' understanding of artifact narratives and historical settings. The museum's spatial architecture blends traditional and modern elements, exhibitions, and interactive elements, creating an immersive cultural discovery experience for visitors.

In summary, these Chinese museums' interior designs incorporate distinct cultural, historical, and regional attributes with contemporary technology and design principles to provide immersive experiences and valuable educational opportunities. To preserve cultural assets and history, modern museums have restored show halls and artifact conservation rooms while keeping their spatial layout and architectural style.

## 5. RESULT AND DISCUSSION: STRATEGIES FOR THE SPATIAL LAYOUT AND DESIGN OF CHINESE MUSEUMS

### A. Integration of Tradition and Modernity

China has long used building and design to express culture. In traditional settings, wooden beams, masonry, carvings, and latticework are culturally significant. Modern technology and aesthetics have made modern design methods and materials popular.

Museum spatial designers must balance historic values with modern aesthetics to create inviting and attractive rooms.

Strategy: Designers must first understand traditional culture's fundamentals and manifestations. Traditional Chinese courtyard architecture emphasizes internal-external separation. Using modern materials like glass harmonizes the interior and outer landscapes while keeping seclusion. To create a new design discourse, conventional components must be integrated with modern design approaches rather than duplicated. Traditional materials like red brickwork or wooden beams can be combined with modern lighting and furnishings to create a beautiful atmosphere in modern rooms.

#### B. Emphasizing Harmony with Nature

Chinese traditional culture values "unity of man and nature" as an inseparable entity that should coexist peacefully. Philosophy, culture, architecture, and spatial design all reflect this philosophical perspective. Traditional Chinese architecture and gardens incorporate landscape painting-inspired landscapes and flora into courtyards to show a deep connection to nature. Museum design should represent the goal of coexistence with nature.

Modern museum design theory remains relevant. By using large glass windows or skylights, designers may seamlessly integrate outdoor natural landscapes into indoor interiors. Indoor vegetation and water features allow visitors to relax and rejuvenate, allowing them to fully enjoy nature's mesmerizing and calming aspects while exploring exhibitions. Natural lighting is also important for energy efficiency and creating a pleasant, realistic lighting atmosphere in interiors.

#### C. Creating Rich Spatial Hierarchies and Sequences

Clearly, spatial hierarchies and sequences matter in design. An efficient spatial layout can give visitors a sequential and multi-dimensional experience with unexpected components in various locations, sparking their curiosity and desire to explore.

Verandas, courtyards, and steps add spatial richness and give visitors a clear path. Through careful use of step and entry heights, designers can create dynamic rooms that provide visitors unique visual and spatial experiences. Tourists can take breaks in courtyards and inner courts to enjoy the surroundings or exhibits. Additionally, different materials and colors can be used to distinguish places, improving visitors' sensory experience.

#### D. Showcase Details and Craftsmanship

Traditional Chinese culture values meticulousness and artistry. From ancient porcelain to exquisite embroidery, artisans have shown their regard and attention to materials and procedures.

In museum spatial design, subtle details and outstanding craftsmanship are important. Designers can use traditional Chinese materials like blue bricks and wood and traditional manual processes like carving, painting, and bricklaying to showcase Chinese craftsmanship. A traditional wooden door with intricate carvings can be the focal point of an area, highlighting wood's tactile properties and the carving process. A wall covered in hand-painted porcelain tiles can also provide history and culture to a room. These subtleties demonstrate skilled artisans' skills and provide tourists a better knowledge of Chinese traditional culture.

#### E. Incorporate Advanced Technology and Equipment

Technology and equipment improve display technology and visitor interaction in modern museums. Technology and interactive features transform the museum concept from a static exhibition space to an immersive instructional center.

The preservation of significant museum items depends on environmental control systems, including humidity and temperature regulation. Exhibitions need lighting systems that control light intensity, direction, and color temperature. This control allows exhibit features to be highlighted and varied spatial atmospheres to be created. Additionally, multimedia display technology like projectors, touchscreens, and sound systems can improve displays, making information more intuitive and visually appealing. Designers must carefully integrate technology and interactive features into space design to meet modern visitor preferences. This requires ensuring the practicality of numerous technologies and equipment while maintaining the space's aesthetic appeal.

#### F. Enhance Interaction and Experience

Museum layouts have developed beyond a display approach to create an interactive setting that actively stimulates visitor participation with exhibitions through multiple means, improving content understanding and experience.

Strategically using interactive touchscreens allows visitors to obtain complete information and gain deep knowledge, helping them understand the displays' storylines. Virtual reality experience zones can transfer visitors to different temporal and geographic dimensions, allowing them to immerse themselves in history or art. Handcrafting sites allow visitors to create or immerse themselves in traditional craftsmanship, helping them understand its complexity. During design, interactive and immersive rooms must be skilfully integrated to ensure guests can easily find them and preserve the visit's flow.

#### G. Ensure Space Flexibility and Multifunctionality

Contemporary museum architecture emphasizes adaptability and multifunctionality due to time, culture, and technological advances. The capacity to quickly and easily adapt to different exhibition and event needs extends the museum's lifespan and keeps it fresh.

Moveable walls and display cases work. Portable facilities can be modified to meet show needs, creating new exhibition areas. Large displays may need a large, open room, while smaller or more specialized exhibits may need a smaller, more personal setting. Modular layout thinking is essential for design versatility. Modular designs allow area composition and division according to specified modules to meet varied functional needs. Museums can host a variety of cultural, educational, and social events, thus its design must be versatile. An auditorium can host academic lectures, artistic performances, and social events.

Designers can increase room flexibility and multifunctionality by using modern technology like motorized sliding walls and variable lighting. Thus, museum spaces can be quickly reconfigured to accommodate large temporary exhibitions, regular educational programs, and occasional social gatherings, ensuring a consistently excellent visitor experience. These methods create spatial hierarchies and sequential elements to provide visitors a historical and creative experience. These methods combine modern design with a deep understanding of Chinese culture and heritage. Thus, they suggest a viable and instructional path for Chinese museum design development.

In conclusion, these solutions reflect China's culture and heritage while meeting modern society and technology's development needs. They guide Chinese museum design practically.

## 6. CHALLENGES AND PROSPECTS IN MUSEUM INTERIOR DESIGN

Drawing upon prior study, it is imperative to initially tackle the obstacle of integrating technology (Green et al., 2005). For example, the seamless integration of contemporary technologies such as Augmented Reality (AR) and Virtual Reality (VR) within historically significant museums, like the Forbidden City, while preserving their original

cultural milieu. In museums that encompass specific area cultures, such as the Nanjing Museum, it is imperative to achieve a harmonious equilibrium between the exhibition of regional cultural artifacts and the incorporation of technological advancements. Given the trajectory of global environmental sustainability and the emphasis on green design, the integration of natural components and the attainment of green architecture in the design process provide a significant challenge. The optimization of visitor flow to mitigate congestion is of utmost importance in the architectural design of the Forbidden City, owing to the significant influx of tourists(Ying, 2021).

In the context of museum interior design, it is imperative for researchers and designers to carefully evaluate the prevailing trends of intelligence and digitalization. In the future, interactive experience zones, such as those found in the Nanjing Museum, may progressively utilize digital technology to offer visitors tailored experiences.

Additionally, there exist prospects for cultural interchange and globalization(Chen, 2004). As exemplified by the Shanghai Museum, there is potential for more collaboration with international museums, facilitating the exchange of exhibits and technologies. This would serve as a platform to demonstrate China's commitment to openness and inclusivity. The enhancement of community integration and educational outreach can be effectively accomplished by the implementation of regular activities at the Tianjin Natural History Museum, which would serve to draw a greater number of local residents and encourage their active participation. The current design trends observed in museums exhibit a heightened focus on environmental conservation and sustainability. The Forbidden City Museum, for example, adeptly incorporates contemporary design elements alongside its historical features, resulting in a harmonious fusion of ancient and modern aesthetics.

In brief, museums situated in diverse places encounter a range of obstacles and opportunities. Nevertheless, in a broader sense, the field of museum interior design is currently undergoing a transformation that emphasizes the amalgamation of conventional elements with contemporary ones(Proctor, 2010), while placing significant emphasis on the principles of environmental preservation and sustainability.

## **7. CONCLUSION**

The interior designs of both the Palace Museum, renowned for its historical significance, and the Tianjin Natural History Museum, celebrated for its modernity and contemporaneity, are imbued with the extensive and varied cultural legacy of China. The aforementioned endeavor not only provides a distinctive and profound cultural encounter for individuals hailing from various global regions but also functions as a notable medium for the advancement and safeguarding of Chinese culture.

Prominent museums such as the Nanjing Museum and the Shanghai Museum are actively endeavoring to effectively incorporate state-of-the-art technology into their conventional interior design, aiming to provide visitors a more engaging, dynamic, and interactive museum experience. By use of pioneering architectural concepts, these museums facilitate the tangible comprehension of historical narratives and the allure of cultural traditions(Qian, 2020), so fostering an enhanced comprehension and admiration for China's rich cultural legacy.

When contemplating the arrangement and structure of museums, these prominent establishments prioritize not only the practicality and logical movement of visitors but also the adaptability and variety of spatial elements. By employing optimal designs, museums strive to establish a more pleasant and user-friendly atmosphere for their guests, so greatly augmenting visitor contentment and further bolstering the museums' social standing and cultural impact.

The field of museum interior design is experiencing a rise in creativity and potential due to the ongoing advancements in technology and the growing diversity of aesthetic perspectives (Bevolo & Bevolo, 2010). Numerous designs adeptly integrate indigenous natural aspects and ethnic cultural attributes, so exemplifying a design philosophy that surpasses temporal boundaries and is forward-looking in nature. These designs serve the dual purpose of enhancing the aesthetic appeal of museums and providing visitors with a more immersive experience that connects them to both nature and ordinary life, all within the context of cultural and artistic exploration (He et al., 2018).

In the continuous evolution of museum interior design, designers encounter various obstacles, including the seamless integration of technology, the preservation of exhibits, and the efficient management of visitor flow (Goulding, 2000). Nevertheless, the increasing prevalence of digitalization, globalization, and sustainability has resulted in museums being presented with a wider range of design concepts and technology, so offering them enhanced prospects and potential. In the current epoch characterized by a multitude of problems and prospects, the field of Chinese museum interior design is demonstrating a proactive approach towards the future by fostering an atmosphere of innovation (Jing, 2006). By consistently fostering innovation and effectively integrating traditional elements with contemporary advancements, such as the harmonious fusion of technology and artistic expression, there exists the capacity to provide visitors with more immersive and profound experiences. Moreover, this approach has the ability to establish novel avenues for the advancement and safeguarding of Chinese culture.

#### Acknowledgments

First and foremost, I would like to express my sincere gratitude to my supervisor, Dr. Mohd Jaki Bin Mamat. His guidance and support were instrumental in the completion of this thesis. Throughout every stage of my research, he provided invaluable advice and encouragement that greatly contributed to the success of this work.

I would also like to extend my thanks to Universiti Sains Malaysia for providing the necessary resources and research environment for my academic pursuits.

Lastly, I want to express my appreciation to all those who supported and assisted me throughout this journey. Without your assistance, this task would not have been possible. Thank you all.

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