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Exploring Exhibition Design in Site Museums: A Case Study of the Hanyangling Museum

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Abstract: With the ongoing upgrade of public tourism consumption, site museums have emerged as prominent cultural symbols, effectively showcasing the unique heritage of the Chinese nation. These museums have become key attractions, where high-quality exhibition planning is essential. Such planning not only helps to articulate the value of the site but also promotes public education, highlights regional cultural characteristics, and boosts local economies. This paper examines the Hanyangling Museum as a case study, focusing on the design of the burial pit protection display hall and the archaeological exhibition hall. It analyzes key aspects of the current exhibition, including spatial layout, artifact display, lighting and visual effects, and the application of digital technologies. In addition, it identifies challenges the museum faces in its exhibition design and offers suggestions for improvement. The findings aim to provide valuable insights for optimizing exhibition strategies at the Hanyangling Museum.

Keywords: Hanyangling Museum; Site Museums; Exhibition; Content Design; Spatial Layout

1. Introduction

A site museum is a type of museum constructed at or near an archaeological site after excavation, where it is deemed necessary to preserve and display the findings. Unlike traditional museums, site museums are defined by the immovable nature of the relics and prioritize the authentic preservation of the site itself. These museums utilize various methods to present and interpret the results of archaeological excavations and the current state of preservation[1]. The Hanyangling Museum, a significant cultural site showcasing the life of the Western Han Dynasty, is renowned for its unique exhibition approach. Particularly praised is the on-site preservation and display of the imperial tomb's external burial pits. This paper examines the museum's content and design strategies, aiming to highlight the distinctive features of exhibitions in such museums and to propose development strategies for enhancing their future growth.

2. Overview of the Hanyangling Museum

The Yangling Emperor Mausoleum of the Han Dynasty, located on the Xi'an Plain in Xianyang, Shaanxi Province, is the joint burial site of Emperor Liu Qi, the fourth emperor of the Western Han Dynasty, and his wife, Lady Wang. Covering an area of approximately 20 square kilometers, the necropolis consists of several key sections, including the imperial and consort tombs, the burial pits for attendants, the village of Yangling, the convict burial grounds, and the residences of those involved in tomb construction[2]. As one of the most well-preserved imperial tombs of the Western Han Dynasty, the Yangling Emperor Mausoleum is a significant embodiment of Han burial practices and sacrificial culture, serving as a crucial source for the study of Han material culture, political systems, and spiritual life.

In 1990, to facilitate the construction of a dedicated highway to Xi'an Xianyang Airport, the Shaanxi Provincial Institute of Archaeology initiated a scientific excavation of the southern section of the Yangling Emperor Mausoleum, revealing several important relics, including the imperial tomb's external burial pits, the South Gate ruins, ancestral hall remains, and the attendant burial areas. This marked the beginning of the grand excavation of Western Han imperial tombs[3]. Today, the Yangling Emperor Mausoleum is a designated National Key Cultural Relic Protection Unit, a AAAA-level national tourist attraction, and a UNESCO World Cultural Heritage site. The Hanyangling Museum and the Yangling Emperor Mausoleum National Archaeological Site Park have been established to promote the ongoing protection and development of this invaluable heritage.

3. Exhibition Content Design of the Hanyangling Museum

The Hanyangling Museum currently features four main exhibition halls: the Protection and Exhibition Hall of the External Burial Pits of the Imperial Tomb, the Archaeological Exhibition Hall, the Protection and Exhibition Hall of the South Gate Ruins, and the Ancestral Hall Ruins[4]. Since the South Gate and Ancestral Hall Ruins are not yet open to the public, this analysis focuses on the presentation methods of the first two primary exhibition halls.

3.1 Content Design of the Protection and Exhibition Hall of the External Burial Pits of the Imperial Tomb

This exhibition hall features display panels embedded in glass near the burial pits, presenting the unearthed relics, specific details, and official titles associated with each attendant tomb. However, the narrative flow is somewhat disjointed, and the logic of the different sections lacks coherence, making it difficult for visitors to gain a comprehensive understanding of the exhibit. To improve, a guided path with transitional graphic and textual markers could be added at the entrance, providing a narrative structure such as "System—Life—Ritual", helping to better connect the various themes.

3.2 Content Design of the Archaeological Exhibition Hall

The basic exhibition is divided into three sections and eight thematic panels, showcasing thousands of exquisite relics that comprehensively introduce the archaeological findings at the Yangling Emperor Mausoleum Site of the Han Dynasty. The first section focuses on the governance philosophy, historical contributions, and the planning and construction of the mausoleum under the reign of Emperor Liu Qi, the Han Dynasty's "Wenjing Era". The second section, drawing on nearly thirty years of archaeological discoveries, uses numerous fine relics to emphasize the historical layout and cultural significance of the Hanyangling Mausoleum, providing a comprehensive portrayal of Han material culture, political systems, and spiritual life. The third section presents innovative methods for the protection, management, and display of the Hanyangling ruins, conveying new concepts in cultural heritage preservation.

Overall, while the museum supplements the site with relics and display panels, the content on these panels is overly detailed, which may lead to reading fatigue and reduce visitor interest. Moreover, the text is too specialized and academic, lacking accessibility for the general public. The labels for the relics mostly only list the name and location of the items, without including important details such as the date of excavation or a brief introduction, which would offer essential context.

4. Exhibition Form Design of the Hanyangling Museum

4.1 Design of the Protection and Exhibition Hall of the External Burial Pits of the Imperial Tomb

The external burial pits are a significant component of the mausoleum complex, with 81 pits arranged in a radial pattern around the imperial tomb mound. In 1998, archaeologists excavated and cleared 10 external burial pits located in the northern part of the eastern side of the mausoleum, uncovering tens of thousands of precious relics, including clay figurines, animal sculptures, daily utensils, granaries, weapons, chariot and horse equipment, seals, and clay impressions[5]. These pits are believed to represent various central government offices and palace institutions of the time, offering an authentic representation of the court culture during the Western Han period. The exhibition hall focuses on the 10 external burial pits uncovered through archaeological excavations, employing "protective display" techniques.

4.1.1 Spatial design

The exhibition hall is situated directly over the original locations of the 10 external burial pits, with a fully buried and sealed design, making it the first "fully underground archaeological museum" in the world. The building's roof is covered with grass and trees, restoring the historical environment and natural landscape of the mausoleum complex[6], achieving the effect of "minimal intervention and maximum restoration". The entire protection hall is built over the 10 burial pits, with more than 1,900 square meters of glass used in the enclosing structure, isolating the site from the surrounding environment. This design creates an optimal space for preserving the relics, providing ideal conditions for their conservation[7]. The museum was completed in 2006 and opened to

the public.

The entrance building is designed in the style of a Han Dynasty palace gate, oriented to the southeast. The entrance pathway is sunken and aligned at a 45-degree angle with the mausoleum's layout. The pathway, which descends 6 meters below ground level, introduces natural sunlight and minimizes the height difference between the building's roof and the outside environment[8]. This design ensures the structure blends harmoniously with the surroundings, drawing visitors deeper into the "underground world" of the mausoleum.

The environment of the exhibition hall is controlled with minimal energy consumption to maintain the temperature and humidity required for the preservation of the artifacts, ensuring stable conditions for the relics[9]. The glass barriers separating the external burial pits from the visitors guarantee the integrity of the preserved environment. The completely transparent space evokes a sense of transcending time and space, as visitors stand above the pits, gazing down at the dense rows of Han Dynasty figurines, granaries, animal figures, chariot and horse remains, and daily utensils—only a meter or two beneath their feet, with history lying at their feet.

The screening room, artifact hall, and exit passage serve as the conclusion of the display. The exit passage gradually rises on a sloping incline, guiding visitors back to the present world. At the exit, there are trash bins for the collection of protective shoe covers, as well as resting chairs and restrooms to help visitors recover from the profound experience.

4.1.2 Exhibit and display of relics

A "preserved-as-found" display method is employed, where special materials and insulated glass are installed directly above the site, creating a barrier between the audience and the relics. This approach not only protects and monitors the condition of the site but also creates an ideal environment for visitors. The elevated platforms and sunken walkways, made of glass, simulate the spatial layers of an archaeological excavation site, enhancing the visitors' understanding of the "underground tomb".

4.1.3 Lighting and visual effect design

The exhibition hall uses LED cold light sources and fiber optic lighting systems with low ultraviolet radiation, preventing the accelerated oxidation and fading of the painted figurines. This lighting choice evokes a solemn and dignified atmosphere befitting the Han Dynasty. Detection systems are installed both inside and outside each pit, and anti-glare treatments have been applied. Different lighting effects are employed across various exhibition areas: the relic hall uses focused lighting to highlight the stratigraphy of the burial pits, while the lighting in the artifact hall is primarily red, matching the color of the Han-style palace gate architecture. This creates a stark contrast with the surrounding dark-colored exhibition halls. Gradual light bands and temperature transitions guide visitors' gaze toward the artifacts. Lighting fixtures are embedded within the architectural structure or along the edges of glass walkways, enhancing the immersive experience of the archaeological site. The combination of natural and artificial lighting, with multi-angle shadow effects, creates a visual experience that gives visitors the sensation of traveling through time.

4.2 Archaeological Exhibition Hall

Completed in 1999 and opened to the public, the hall displays over 1,700 artifacts, encompassing thirty years of significant archaeological findings from the Hanyangling Mausoleum. The exhibits cover several thematic sections, including an overview of the mausoleum, the external burial pits of the imperial tomb, the southern burial pits, and the subordinate tombs. The exhibition employs a combination of images and text to introduce the layout of the mausoleum, terracotta art, daily utensils, weaponry, and other typical relics. Through the architectural appearance, spatial narrative, artifact displays, lighting ambiance, and the integration of digital technology, the exhibition creates a professional, artistic, and immersive display system.

4.2.1 Architectural appearance

The design of the building follows an ancient style, harmonizing with the mausoleum's timeless atmosphere. The space is laid out in a semi-subterranean two-story structure, with one floor above ground and one below, avoiding the impact of large structures on the natural environment of the park.

4.2.2 Visitor flow design

The Archaeological Exhibition Hall consists of two levels: one above ground and one below. Upon entry, visitors are greeted by the foyer. The first thematic section is located on the upper

level, with a linear design. At the end of this section, descending stairs lead to the lower level. The walls of the staircase passage feature a faux earth platform design, and the floor is adorned with Han Dynasty patterns, drawing visitors back into the vibrant scene of the Western Han period. The second and third thematic sections are located here. The concluding hall includes a screening room for displaying related exhibition content. Outside the exhibition hall, there is a message wall where visitors can write down their experiences and future aspirations on sticky notes.

4.2.3 Exhibit and display of relics

A variety of display methods are used, including restoration-style displays, central displays, thematic presentations, and grouped displays. Artifacts such as terracotta figurines, weapons, and daily utensils are exhibited in thematic clusters. For instance, a terracotta figurine matrix of "civil officials—warriors—maidservants" and a combined display of lacquerware, ceramic stoves, and kitchen utensils express the daily life of the Han Dynasty. With supporting text and imagery, the exhibition restores the social systems, military organization, and cultural life of the Han Dynasty.

4.2.4 Lighting and visual effect design

The exhibition uses a variety of lighting techniques, including track spotlights, floor lights, and ambient lights, to highlight the details of the artifacts and exhibit panels.

The design of the display conveys historical symbols through the building's form, establishes a narrative logic through the visitor's journey, and restores the historical context through lighting. Technological means bring the artifacts to life, while the innovative use of digital media bridges the past and present. This has successfully transformed the site from a "preserved display" to a "cultural experience". However, the use of scenographic displays with auxiliary artifacts is somewhat limited, and multimedia interactive installations are sparse, which results in a somewhat tiring visitor experience.

5. Existing Issues and Suggested Improvements for the Exhibition

5.1 Conflict between Environmental Capacity and Visitor Flow

The preservation of cultural relics requires a stable and enclosed environment, while displays demand open spaces to accommodate visitors. The fluctuations in temperature, humidity, and air movement caused by the flow of visitors pose a persistent threat to delicate artifacts such as earthen ruins and painted terracotta figurines. Currently, Hanyangling receives hundreds of thousands of visitors annually, with peak periods during holidays. For example, the museum received approximately 33,200 visitors during the 2024 Chinese New Year, and the high density of visitors and frequent foot traffic place considerable pressure on the preservation of the site, while also causing overcrowding in exhibition halls, rest areas, parking lots, and bathrooms. To address this, the museum could implement a dynamic, time-based, and zone-specific open strategy, increase temporary exhibitions and interactive experience areas, and control the capacity of core areas to balance both preservation and exhibition needs. Additionally, the museum could raise visitors' environmental awareness through educational campaigns on days such as "Tree-planting Day", "Labor Day", and "World Environment Day", guiding visitors to engage in civil and respectful visitation, thereby reducing the impact on the museum environment. Moreover, the museum can alleviate the pressure of in-person visits by offering virtual exhibitions and online educational resources to cater to a wider audience.

5.2 The Gap between Exhibition Narrative and Public Understanding

There exists a significant gap between professional archaeological terminology and the general public's comprehension, while simplified explanations may lead to cultural misinterpretations. For instance, the term "external burial pit" could confuse ordinary visitors. What is the difference between this and the "funerary pits"? Is it exclusive to the imperial tombs of the Han Dynasty? Visitors, lacking knowledge of the Han funeral system, may struggle to understand the connection between the "external burial pit" and the imperial burial regulations. If not properly explained or simplified, this term can lead to misunderstanding among many visitors. Additionally, the terracotta figurines of Yangling originally had painted wooden arms, yet the explanatory plaques emphasize the concept of "clothed figurines", though only the

ceramic bodies remain, leading to a high rate of misinterpretation among viewers. Furthermore, the exhibits are arranged according to material and excavation stratum, severing the link between the artifacts and historical context. The isolated display of the terracotta figurine rows, without the accompanying chariot and horse figurines or ritual instruments from the same period, can lead to inaccurate interpretations of burial customs. The exhibition's narrative language should be "people-centered", deeply analyzing historical culture and transforming it into an accessible form for the public, achieving a "depth made simple" approach[10]. For difficult-to-understand core terms, the exhibition design should offer simplified explanations through analogies— for example, equating the "external burial pit" to an "exclusive warehouse for Han Dynasty emperors", or likening "huangchang tizou" to a "high-end security system for tombs". Additionally, the "historical matrix" narrative mode could be developed, focusing on key artifacts (such as dressed and molded figurines), exploring their costumes, connecting to Han textile techniques, social hierarchies, and Silk Road cultural exchanges. Collaboration with other museums could allow for comparative analysis. By using a more accessible, everyday narrative language, the exhibition can not only enhance its quality but also facilitate the popularization of historical and cultural knowledge.

5.3 Create a Special Exhibition of Hidden Pits outside the Hanyangling to Better Display and Explain the Site

The exhibition form of the pit outside the Hanyangling has a unique design, which is the paradigm of the site museum, but its form and content are seriously out of line. Therefore, it is urgent to create a special exhibition to realize the multi-dimensional interpretation and public transformation of the value of cultural heritage. It is necessary to break the traditional exhibition mode and establish an exhibition system of "system -- technology -- faith". At the institutional level, the spatial distribution of tunnels and the combination of excavated artifacts are used to simulate the ceremonial functions of the government agencies in reality. At the technical level, it focuses on the production skills, drainage system and ramming skills of the pottery figurines of the Han Dynasty, showing the wisdom of the craftsmen; At the faith level, the historical view behind each cultural relic is interpreted, such as the underground kitchen symbolized by pottery livestock, the etiquette norms reflected by the sculpted female figurines, and the garrison system constructed by the warrior figurines. Set up "archaeology in progress" in the exhibition area, live broadcast the excavation site or broadcast video records, release the latest research results, break academic barriers, and maintain the forefront of the exhibition. During the visit, the explanation service is insufficient, there is no audio guide, and there is a phenomenon of explanation fault. It can build a multilingual intelligent guide system to customize interpretation perspectives for audiences with different cultural backgrounds. For example, set up puzzle games for young people, find the clues of etiquette in the pit, and unlock the knowledge module of the official system of the Han Dynasty; The foreign audience focuses on the comparison of Chinese and foreign funeral culture. The planning of the special exhibition of the pit outside the Hanyangling is a beautiful interpretation of the social life of the Han Dynasty, safeguarding the authenticity of the cultural heritage, dialogue with the contemporary era, and making the ancient ruins truly a cultural carrier for the public to perceive, think and experience.

5.4 Strengthen the Application of Digital Technology, and Technology Enables Historical Experience

The existing exhibition methods of Hanyang Mausoleum are mainly static, which fails to fully demonstrate the heritage value. A large number of archaeological reports and scientific and technological testing data are sealed in academic research level, and the content is difficult to understand, which has not been transformed into a perceptible exhibition language. Digital technology can be used to link physical exhibits with digital sand tables to dynamically demonstrate the relationship between the outer Tibetan pit and the Hanyangling. The marching scene of the Han Dynasty honor guard can be set up in the chariot and horse equipment exhibition area to reveal the ceremonial function of the instrument combination. Set up the two-dimensional code of pottery figurines to activate the story chain of "past and present lives", such as the restoration image of Jiyue figurines associated with Han

Dynasty music and dance, and the warrior figurines linked to the garrison scene of Weiyang Palace; Set up an interactive digital platform, the audience can simulate cleaning pottery pieces, stitching artifacts, and learn archaeology methodology in the game. Different types of digital exhibition methods provide an optimal path for the interpretation and expression of the value of Hanyang Mausoleum site and enrich the audience's visiting experience.

6. Conclusion

At present, the exhibition language and form design of heritage museums are uneven, especially the small and medium-sized heritage museums, which have limited resources and outdated exhibition methods, and still stay in the traditional mode of "only display and not developed" in the past, which can not well explain the value of heritage. Through the research on the curatorial method of Yangling Museum of Emperor Jingdi of Han Dynasty, the core feature of the museum is the minimal intervention on the site itself, so that protection and development can be carried out in parallel. However, in the future, further improvements should be made in dynamic monitoring, interactive experience and academic transformation, so as to realize the deep integration of protection, research and display.

References

[1] Ma Yupeng. Practice and research on the construction of the Shangdu Site Museum in Zhengzhou. Chinese Museum, 2022(2): 91-94.

[2] Li Gang, Tian Yaqi, Xiao Jian, et al. A survey on the archaeology of Qin and Han Dynasties in Shaanxi Province from 2008 to 2017. Archaeology and Cultural Relics, 2018(5): 66-110.

[3] Zhang Yuxing, Chen Liang. Site interpretation and display from the perspective of the construction of archaeological site park -- taking the construction of the identification system of Hanyang Mausoleum National Archaeological Site Park as an example. Identification and Appreciation to Cultural Relics, 2024(20): 157-160.

[4] Zhang Pan. Research on innovative design of cultural and creative products based on cultural relics collected in Yangling Museum of Emperor Jingdi of Han Dynasty. Textile Report, 2019, 42(8): 81-83.

[5] Yang Yamei, Cao Junji, Li Ku et al. Physical and chemical characteristics of soil, atmosphere and weathering crust of Hanyang Mausoleum Underground Museum. Chinese Powder Technology, 2009, 15(2): 38-45.

[6] LI Ku, Shi Ning, Wang Baoping. Shaanxi "Zhou, Qin, Han, Tang" one of the four major tourist attractions: Hanyang Mausoleum. Relics and Museolgy, 2006(3): 2+1+97.

[7] Zhou Jin. The implications of settlement archaeological research for site museum display. Theory Horizon, 2012(5): 91-92.

[8] Yang Minge, Shao Jizhong, Wan Wentao et al. Research on integrated design method of above-ground and underground landscape of heritage museum. Southeast Culture, 2021(S2): 41-45.

[9] Liu Kecheng, Xiao Li. Hanyang Mausoleum preservation pit outside the mausoleum exhibition hall. Architectural Journal, 2006(7): 68-70.

[10] Li Zuomin. Translation: From academic terminology to exhibition language -- taking Baodun Museum as an example. Chinese Museum, 2024(5): 42-52.