
The concept of "Nine Stars in the Sky, Nine Provinces on Earth" guided the urban design in ancient China

Jin Lipeng, PhD candidate at the Department of History of Belarusian State University

Abstract: One of the core concepts of ancient Chinese civilization is the "harmony between humanity and nature", emphasizing that the way of human conduct should imitate the way of heaven and earth. In architectural practice, the concept of "Nine Stars in the Sky, Nine Provinces on Earth" is a typical reflection of this ideology. This paper first succinctly outlines the concepts of the Nine Stars, Nine Provinces, and Nine Sectors, along with their interrelations and correlations. It then discusses in detail the application of this concept in the context of specific examples such as the Jiuzhou Qingyan in the Old Summer Palace (a large imperial garden during the Qing Dynasty from 1724 to 1860) and the Jiuzhou Pond in Luoyang (an important royal garden in the Ziwei City which was the imperial city of Luoyang during the Sui and Tang dynasties). Finally, the paper provides a systematic exposition on the application of this concept in the practical engineering project of the Luoyang Jiuzhou Pond, offering insights for researchers in architectural history and architects alike.

Keywords: Nine Stars, Nine Provinces, Old Summer Palace, Jiuzhou Qingyan, Luoyang Jiuzhou Pond

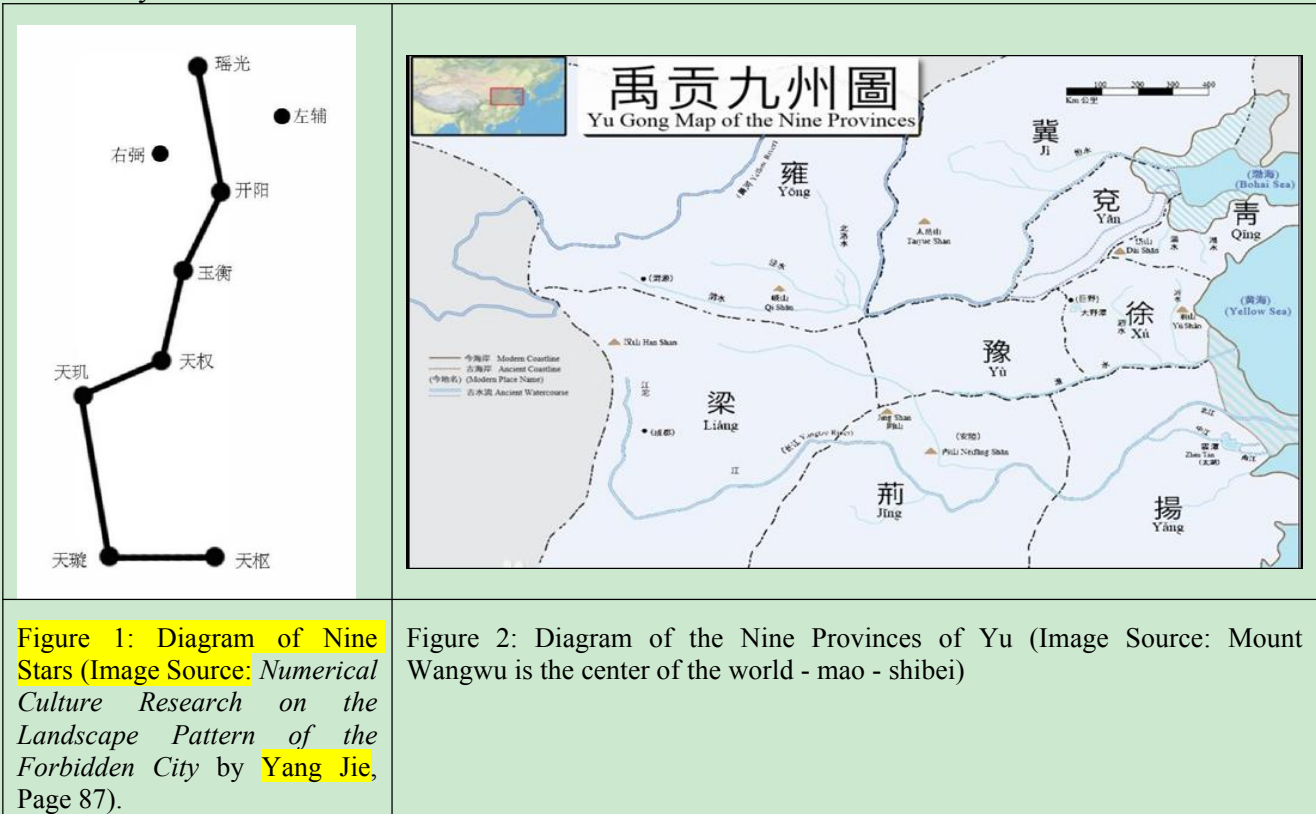
1 Overview of Nine Stars and Nine Provinces

The *Dao De Jing* states, "For I am abstracted from the world, the world from nature, nature from the way, and the way from what is beneath abstraction,"^[1] which emphasizes the operational law that the way of human conduct should imitate the way of heaven and earth. One manifestation of this concept is that "Heaven determines the Nine Stars, Earth determines the Nine Provinces, and the human body has nine orifices." The specific practice is reflected in the *Book of Changes: Xici II*, that is "In ancient times, Baoxishi (Fuxi), as the world's king, headed up to observe the sky, headed down to observe the terrain, and also observed the patterns of birds and beasts and various things that grow on the earth. He took things from himself nearby and from all things far away, and then began to create the Eight Trigrams to understand the virtues of the gods and to express the conditions of all things."^[2] By observing the surrounding objects, these early sages were able to create tools and artifacts. Architecture, being an important category of such tools, incorporates the concept of "Heaven determines the Nine Stars, Earth determines the Nine Provinces" and applies it in both traditional architecture and pseudoclassic architecture.

1.1 Implication of Nine Stars, Nine Provinces, and Nine Sectors

The Nine Stars originate from ancient reverence for celestial bodies, combining mythology and astronomy. In astronomy, there is the concept of Beidou Seven Stars (the Big Dipper) with its seven constellations including the first white Tan Lang, the second black Ju Men, the third virid Lu Cun, the fourth green Wen Qu, the fifth yellow Lian Zhen, the sixth white Wu Qu, and the seventh red Po Jun. There are two stars between Po Jun and Wu Qu of the Big Dipper's handle, one is You Bi which is not visible and is ranked eighth, and the other is Zuo Fu which is often seen and is ranked ninth. In feng shui, the Nine Stars are the first white, the second black, the third virid, the fourth green, the fifth yellow, the sixth white, the seventh red, the eighth white, and the ninth purple.^[3] The "Yabai Chi Method (a traditional terminology for Chinese architectural design)" in construction can be traced back to the *Yin Yang Book* quoted in the *Shilin Guangji* of the Southern Song Dynasty: "For the first white, the second black, the third virid, the fourth green, the fifth yellow, the sixth white, the seventh red, the eighth white, and the ninth purple, these are all names of stars, but the white star is the most auspicious. The method of using it does not matter the chi, but the cun is the standard. One, six, and eight cun are auspicious. Carefully compared with the Luban ruler and more skillful calculation, the use of white stars is deemed as greatly auspicious, and this method is

commonly called Yabai. And this ruler uses a measurement of ten cun as one chi." [4]



In ancient times, the territory of Huaxia in the pre-Qin period was limited to states ruled by "the king's collateral descendants, maternal uncles, nephews, and uncles", such as Lu (now Shandong Province), Jin (now Shanxi Province), Qi (within now Shandong Province), Zheng (within now Henan Province), Cai (now Shangcai County, Henan Province), Wei (located roughly at the junction of Hebei, Henan, and Shandong provinces north of the Yellow River), as well as central plains states like Song and Chen that adhered to the rites of Zhou. During the Han dynasty, the concept of the Nine Provinces of the Han nationality emerged based on these pre-Qin states. The Nine Provinces refer to the Han territory and were first mentioned in the pre-Qin classic *Shangshu – the Tribute of Yu* as "Ji, Yan, Qing, Xu, Yang, Jing, Yu, Liang, and Yong" (now). According to the records of *Shangshu – the Tribute of Yu*, the Nine Provinces are: Jizhou (the whole territory of now Shanxi, northwest Hebei, northern Henan, southern Liaoning, Hohhot City and Ulanqab City in Nei Mangol), Yanzhou (now eastern Henan, western Shandong and southern Hebei), Qingzhou ("between the Bohai Sea and the Mount Taishan is Qingzhou", generally referring to an area starting from the Bohai Sea and the Mount Taishan and covering Hebei and Shandong Peninsula), Xuzhou (now Huaihai area), Yangzhou (starting from Huaishui in the north and reaching the coast in the southeast, south of Huaishui in Jiangsu and Anhui provinces), Jingzhou (now Nanzhang County, Hubei), Yuzhou (most of now Henan, including western Shandong and northern Anhui), Liangzhou (now southern Shaanxi, Sichuan and Yunnan), Yongzhou (now northern of central Shaanxi, Gansu excluding the southeastern part, southeastern Qinghai, Ningxia, and Bayannur City, Wuhai City, Ordos City, Baotou City in Nei Mangol). The concept of the Nine Provinces is slightly different in different works. In *Erya*^[5], there are Youzhou and Yingzhou but no Qingzhou and Liangzhou. In *the Rites of Zhou*^[6], there are Youzhou and Bingzhou, but no Xuzhou and Liangzhou. Since the Warring States Period, the Nine Provinces has become a synonym for ancient China. Lu You of the Song Dynasty used "Nine Provinces" to refer to the country in "it's a grieve to see the Nine Provinces not yet united" from his poem *To My Son*^[7].

The Nine Sectors refers to the division of the celestial realm by ancient Chinese astronomers into nine sectors using a grid pattern resembling the Chinese character jing (井, literally meaning well), including Qian (乾宫), Kan (坎宫), Gen (艮宫), Zhen (震宫), Zhong (中宫), Xun (巽宫), Li (离宫), Kun (坤宫), and Dui (兑宫). By observing the movement of the celestial seven luminaries and constellations on the ground during night, information of directions and seasons can be learned.^[8]

1.2 Correspondence between the Nine Stars, Nine Provinces, and Nine Sectors

In his work *Ling Xian*^[9], Zhang Heng wrote: "There are nine directions in the sky and nine regions on the earth. There are three planets in the sky including the sun, the moon and the stars. There are three shapes on the earth including the two poles and the equator. In this way, we have celestial phenomena that can be calibrated and shapes that can be measured." Understanding the correspondences between heaven, earth, and humanity achieves the status that "by observing the astronomical phenomena above, examining the geography below, and scrutinizing human affairs in between, what is right and wrong as well as what is feasible and unfeasible will become evident and undeniable." The concept of "Heaven determines the Nine Stars, Earth determines the Nine Provinces, and the human body has nine orifices" is actually the one-to-one correspondence among the Nine Stars in the sky, the Nine Provinces on the earth, and the Nine Sectors, which reflects the idea of Interactions between Heaven and Mankind. The correspondences among the Nine Stars, Nine Sectors, and Nine Provinces are as follows: the first star of the Big Dipper, Tianshu, corresponds to the ninth sector Li Gong, representing Yangzhou; the second star, Tianxuan, corresponds to the eighth sector Gen Gong, representing Yanzhou; the third star, Tianji, corresponds to the seventh sector Dui Gong, representing Liangzhou; the fourth star, Tianquan, corresponds to the sixth sector Qian Gong, representing Yongzhou; the fifth star, Yuheng, corresponds to the fifth sector Zhong Gong, representing Yuzhou; the sixth star, Kaiyang, corresponds to the fourth sector Xun Gong, representing Xuzhou; the seventh star, Yaoguang, corresponds to the third sector Zhen Gong, representing Qingzhou; the eighth star, Zuofu, corresponds to the second sector Kun Gong, representing Jingzhou; and the ninth star, Youbi, corresponds to the first sector Kan Gong, representing Jizhou (see Figures 1, 2, and 3).^[10]

The rotation of celestial stars around the North Star in the northern hemisphere is a well-observed phenomenon, and many ancient Chinese architectures ingeniously incorporate this into their layouts. Ancient Chinese craftsmen applied and developed the concept of Nine Stars and Nine Provinces, enhancing the manifestation of "heaven" in architecture. By utilizing the concepts of Nine Provinces and Nine Stars, they simulated or reproduced celestial and terrestrial images to make architectures or cities present the momentum of the cosmos and the heaven and earth, creating architectural complexes that resemble "heaven and earth". Typical examples include the Forbidden City in the Ming and Qing dynasties, Jiuzhou Qingyan in the Summer Palace, and the Luoyang Jiuzhou Pond. This paper uses the latter two examples to illustrate these concepts further.

2. Embodiment of the Cultural Image of Nine Stars and Nine Sectors in Construction Practice

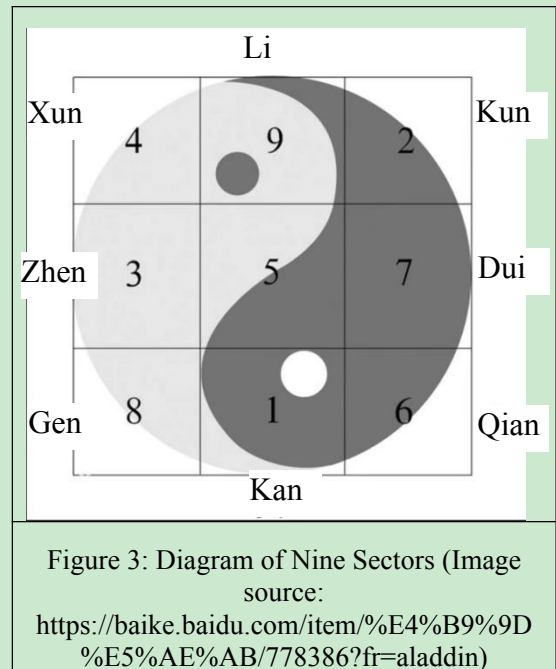




Figure 4: Aerial view of Jiuzhou Qingyan (Image Source: Landscape Architecture Art, page 109, drawn by Liu Yue and Song Guxin)

2.1 Utilization of Spatial Imagery

The Jiuzhou scenic area served as a crucial area for governance and residence for the Qing Dynasty emperors. The main living place for emperors and empresses is located north of the Hall of Rectitude and Honor / Zhengda guangming on the island of Jiuzhou Qingyan. The other eight islands around the Houhu Lake have various functions such as observing crops and verifying agriculture (Apricot Blossom Spring Villa / Xinghua chunguan), fish watching (The Magnanimous World / Tantan dangdang), flower appreciation (Engraved Moon and Unfolding Clouds / Louyue kaiyun), scenery appreciation (A Painting of Nature / Tianran tuhua, Heavenly Light Above and Below / Shangxia tianguang), studying (Harmony of the Present with the Past / Rugu hanjin, Green Wutong Tree Academy / Bitong shuyuan), and worshipping (Merciful Clouds Protect All / Ciyun puhu). These islands symbolically represent the "Tribute of Yu's Nine Provinces."

Jiuzhou Qingyan exemplifies the cosmic concept of "harmony between humanity and nature" and the technique of creating a miniature landscape, through nine small islands consisting of one main and eight auxiliary, separated by water. This approach of condensing cosmic intentions into a miniature system is a significant expression of traditional Eastern natural philosophy. From "Engraved Moon and Unfolding Clouds / Louyue kaiyun" to "Harmony of the Present with the Past / Rugu hanjin," all are included in "Jiuzhou Qingyan". This abstract condensation of the universe in form, along with the ability to establish emotional connections between individuals and the cosmos, highlight its deep Eastern philosophical roots.^[11]



Figure 5: Pavilions, terraces and open halls of Jiuzhou Qingyan
(Image Source: *Forty Scenes of the Old Summer Palace*)

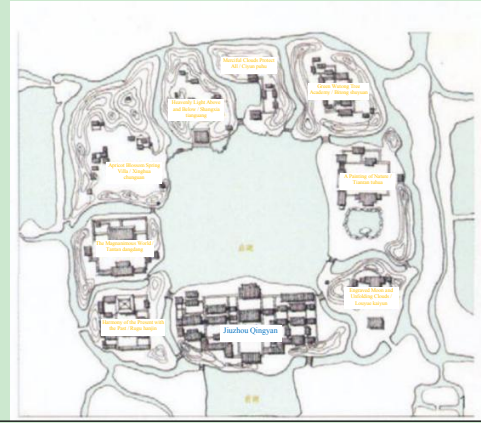


Figure 6: Floor plan of Jiuzhou Qingyan
(Image Source: *The Art of Plant Landscaping through the "Jiuzhou Qingyan" Picture in the Forty Scenes of the Old Summer Palace*)

2.2 Characteristics of Spatial Form

The Jiuzhou scenic area within the Old Summer Palace exhibits distinct geographic features, with each part around the Houhai being both independent and interconnected. Complexes of buildings are formed through courtyards, and the plants intermingle and permeate the "natural" spaces of these courtyards and architectural spaces, creating an interconnected organic whole. Due to the features of asymmetry and dispersion of the architectural complexes, definitive boundaries between spaces are not formed. Therefore, the spatial sense formation relies heavily on dense foliage acting as barriers, enhancing the perceived volume of each island.

Jiuzhou Qingyan consists of nine islands, each of which is an independent scene and is interconnected by bridges with others. When viewed from above, the Jiuzhou scenic area, along with the Hall of Rectitude and Honor / Zhengda guangming and the Diligent and Talented Government / Qinzhen qinxian in the south, resembles a turtle, as turtle symbolizes longevity and peace in ancient times. The layout of Jiuzhou Qingyan adopts a turtle-back layout, presenting a configuration that the entire space is embraced by Jiuzhou, also subtly hinting at a miniature representation of the Qing Empire's territory. Feng shui emphasize that "qi stops at water", and the various lakes and winding waterways within Jiuzhou Qingyan not only outline the map intentions of China and the world but also create a favorable feng shui environment for each island.

3 Jiuzhou Pond of Luoyang City in Sui and Tang Dynasties

3.1 Manifestation of Overlapping Images of Nine Stars, Nine Sectors, and Mountain-River Geography

In the year 605 AD (the first year of Sui Dynasty's Daye era), Emperor Yang of Sui began the construction of the Eastern Capital Luoyang City across the Luo River. The description "straight to Yique in front, backed by Mangshan Mountain, with Chan River to the left and Jian River to the right, and Luo River flowing through the middle, while Yi River passing southeast of the city and flowing northward" indicates that there were four major natural rivers, namely Chan River, Jian River, Luo River, and Yi River, around the ancient Luoyang City of Sui and Tang dynasties. The Luo River enters the city from the south of the Shangyang Palace in the west of the city, and runs horizontally across the entire city from along the south of the imperial city. The Jian River, also known as the Gu River, enters the city from the northwest corner and mainly flows through the imperial city, Shangyang Palace, and West Imperial Park, finally joining the Luo River. During the construction of the Sui and Tang Dynasties' Luoyang City, the Gu River was diverted into the imperial city, where numerous ponds and marshes were built alongside it. The largest of these

imperial gardens with ponds was the Jiuzhou Pond. ^[12] Jiuzhou Pond was located on the high ground northwest of the Ziwei Palace within the imperial city of Luoyang City in Sui and Tang dynasties. Water from the pool radiated towards the imperial city, creating a landscape of densely woven water networks with palaces, pavilions, and towers interspersed throughout the gardens. Jiuzhou Pond, being an artificially excavated pond, contained several islands within it. Palaces and buildings were arranged among the islands, flowers, and willow shades around Jiuzhou Pond, embodying the royal design philosophy of integrating daily living and leisure spaces into a harmonious whole. It holds significant aesthetic value as a result.

During the Tang and Song Dynasties, both empires continued to use the Eastern Capital Luoyang City established by the Sui Dynasty, serving as either the eastern capital or western capital for a duration of five hundred years. The construction, utilization, and abandonment of Jiuzhou Pond sychronized with the rise and fall of Luoyang City from the Sui to the Song Dynasty, closely intertwined with the social, political, and economic developments of the time (see Figure 5, Figure 6). Historical records from later generations state: "Jiuzhou Pond was located south of the Renzhi Hall and west of the Guiyi Gate. The terrain was winding, resembling the nine continents of the Eastern Sea. It covered an area of ten hectares, with water depths exceeding ten meters. Birds and fish swam freely, while flowers and plants adorned the surroundings." Other records mention specific structures within Jiuzhou Pond: "The Yao Guang Hall was built on an island within the pool during the Sui Dynasty." Additionally, "The Wangjing Pavilion, built by the Emperor, stood forty feet high to the north of Jiuzhou Pond, spanning twenty-five steps in width." These texts provide a vivid depiction of the gardens and architectural landscapes of Jiuzhou Pond.

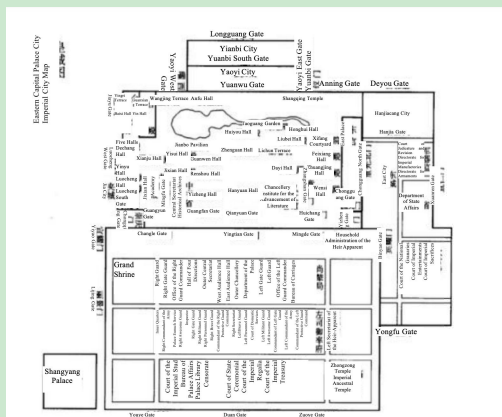


Figure 7: The Location and Shape of Jiuzhou Pool in *Research on the Capital City Districts of Tang Dynasty: The Map of the Imperial City and Palace City of Eastern Capital* (Image source: A Preliminary Study of Jiuzhou Pool in the Imperial Garden of Luoyang Palace City in Tang and Song Dynasties, Page 38)

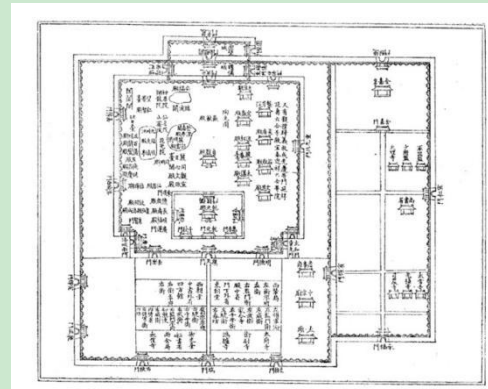


Figure 8: The Location and Shape of Jiuzhou Pool in *Henan Annals - Map of the Eastern Capital City of Tang Dynasty* (Image source: A Preliminary Study of Jiuzhou Pool in the Imperial Garden of Luoyang Palace City in Tang and Song Dynasties, page 39)

3.2 Grasping the Cultural Ideology in the Process of Protection and Reconstruction

This project adheres to the cultural heritage protection principles of "Put protection first, strengthen management, explore value, make effective use and revitalize cultural relics." It implements the following principles: 1. Ensuring the overall authenticity and integrity of the layout of underground relics. 2. Ensuring the findings from archaeological excavations as the basis for all interpretations and displays. 3. Ensuring that display methods and materials are identifiable and clearly distinguishable. 4. Ensuring the reversibility of display techniques and technologies; 5. Ensuring that the display effects are comprehensible and convey meaningful information to visitors. 6. Ensuring that the exhibition results are dynamic; the exhibition design is dynamically adjusted based on archaeological excavations, and the exhibition content will be further increased as the archaeological achievements become richer. This project aims to recreate the grand royal garden landscape of the "One Pool, Three Mountains" during the prosperous Tang Dynasty under Empress

Wu Zetian, centered around Jiuzhou Pond. It will integrate with the adjacent "The Supreme Buddhist Temple" and "Imperial Academy" within the National Heritage Park of Luoyang City of Sui and Tang Dynasties located to the east, collectively showcasing the grandeur of the palace city area of Luoyang City of Sui and Tang Dynasties in the Tang Dynasty. ^[13]

While inheriting and restoring the grand Tang Dynasty style, this project also integrates innovative elements that resonate with contemporary spirit. The initial design of the Jiuzhou Pond adhered to the principle of "vitality". Within the garden, some islands are accessible by foot, while others require boats for access. ^[14] The stone surfaces on the islands of the Jiuzhou Pond are suitable for performances. The positioning of platforms and the flow of people have been meticulously calculated, so the site can be understood as a stage of a classical Chinese garden. The garden features nine islands of varying sizes, symbolizing the nine continents of the Eastern Sea. The nine thematic artistic conceptions revolve around "Nine Continents", offering changing views with each step and creating a harmonious and integrated whole. This project is not merely a replica of ancient times, but an innovative restoration that preserves tradition in a contemporary context. It seeks to revive the classical charm and spirit, which provides an answer to the contemporary challenge of how to inherit and carry forward traditional culture amidst urbanization (see Figure 7, Figure 8).

Based on the preservation status and conservation requirements of archaeological sites, an analysis of the display methods and feasibility of these sites has been conducted. 1. For sites with poor preservation status or unsuitable for open-air display, additional cushion layers are added after backfilling, allowing for a simulated display on it. The foundation of simulated display constructions is expanded outward, and the upper construction is supported by steel structures to protect underground relics. 2. For sites with preservation status allowing for open-air covering display and with complete layouts, the method of reconstructing exhibition sheds is adopted. 3. For sites with incomplete layouts, the method of glass coverings for partial display is adopted. Landscape garden design is adopted for showcasing the pond's form, garden landscape, etc. The water system and island layout of the Jiuzhou Pond have been restored.



Figure 9: Aerial view of Jiuzhou Pond (Image Source: https://www.aoya-hk.com/html/2020/p1-4_1104/633.html)

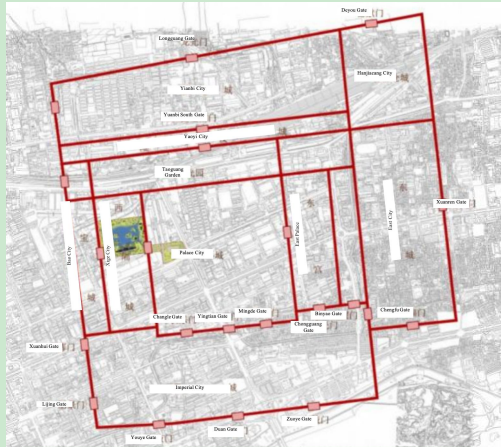


Figure 10: Plan of the reconstruction of Jiuzhou Pond (Source: Design Plan for the Protection and Display of the Jiuzhou Pond Site in Luoyang, page 39)

The largest three islands within the Jiuzhou Pond divide it into north and south sections, connected longitudinally by water channels. Jiuzhou Pond is built with on flat ground as it has "broad waters without mountains". Numerous islands are one of the Jiuzhou Pond's characteristics. The theme of "One Pond, Three Mountains" is crucial in the construction of imperial gardens, symbolized by the creation of three islands in the pond to evoke the artistic conception of the three mythical mountains: Penglai, Fangzhang, and Yingzhou. The palace construction of the Sui and Tang dynasties inherited this tradition, and the theme of "Three Mountains" is manifested in the imperial gardens of both eastern and western capitals. In the Jiuzhou Pond, various islands of different sizes are found, indicating a theme of "island-mountains," which do not rigidly adhere to the number

"three". Building islands with earth and constructing halls and pavilions on them are characteristics of the garden style of Chinese landscape painting.

3.3 Landscape Scale and Design of Individual Constructions

In the design phase, the constructions of the Jiuzhou Pond scenic area must harmonize with the architectural features of the established Supreme Buddhist Temple and Imperial Academy, and continue their magnificent and solemn styles while highlighting its own characteristics as an imperial garden landscape. Simultaneously, it should showcase the unique blend of natural and artificial scenery. In terms of micro-terrain, vegetation, water, shoreline boundaries, and paving materials, the design aims to emphasize a natural and rustic style.^[15] Additionally, in the reconstruction of islands, the layout and contour line of the Jiuzhou Pond site discovered by archaeology are strictly followed. The construction of revetments is structured to restore the historical water and island layout of the period.

Scale design is an important method in ancient Chinese architectural planning and design. This project employs the technique of moving the heaven and compressing the earth, where small elements represent larger concepts, creating an artistic conception of vastness within a small space.^[16] Archaeological findings revealed small foundations on the islands, measuring 11.4 meters east-west and 8.58 meters north-south. Mr. Yang Hongxun confirmed these as small pavilions, "What is striking is that such small pavilions actually have two stairways on the front, that is, one on each side in the south." These buildings integrated into the Jiuzhou Pond landscape have extremely narrow spans, ranging from just over 1 meter to about 2 meters, which are much smaller than the usual 4 to 5 meters of normal halls. Meanwhile, the left and right steps are employed to enhance the grandeur of the pavilion's appearance.^[17] The purpose of making hall so small is to emphasize the spaciousness of the surrounding area. It is a way of spatial expansion in order to convey the theme of the vast 'East Sea'. This technique of compressing scale to portray a grand artistic conception is representative in the history of Chinese garden architecture."

This project implements effective protective measures to ensure that the architectural sites of the pavilions, corridors, halls, and other historical remains from the Sui, Tang, and Song dynasties are not damaged by both natural and human factors, and to achieve the comprehensive protection of the Jiuzhou Pond site and its environment. Meanwhile, the project aims to showcase the historical remains from the Sui, Tang, and Song dynasties within the site, trace the historical environmental features of the Jiuzhou Pond, the Supreme Buddhist Temple and Imperial Academy, and reveal the significant cultural value of the Jiuzhou Pond and the remains of the Luoyang City in the Sui and Tang dynasties.

4 Conclusion

Chinese traditional culture refers to heaven, earth, and humanity as three talents, advocating the unity of them. Architecture reflects Confucian ritual culture which emphasizes the hierarchical relationships among social members. The reflection in architecture is that people of different ranks use different forms of buildings, that is, the social and economic status of people should be reflected in architecture. The application of the concept "Heaven determines the Nine Stars, Earth determines the Nine Provinces" in architecture is a typical example. In specific architectural design and construction, it is not merely about mimicking natural forms, but also involves induction, contemplation, and reasoning to form philosophical concepts and further integrate them into architectural design. The overall and comprehensive perspective is the strength of our nation. It is an excellent tradition worth carrying forward to grasp the macro city, the meso architectural courtyard and the micro architectural details from the cosmic model and the unity of heaven, earth and humanity.

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