Sustainable Development of the Construction of the Great Wall National Cultural Park Empowered by Digital Intelligence: Internal Logic and Practical Innovation

Xie Dan **Du Jinbiao** School of Architecture & Art Design, Hebei University of Technology

ABSTRACT

The Great Wall National Cultural Park is a cultural project under the guidance of the state, relying on the cultural resources of the Great Wall, with the core purpose of protecting, inheriting and displaying the cultural heritage of the Great Wall. At present, its construction and development are faced with the practical dilemma of how to achieve sustainability. As an important means of sustainable development in today's digital intelligence era, digital intelligence technology is conducive to the protection and inheritance of cultural heritage.The purpose of this paper is to analyze the internal logic of digital intelligence technology to empower the construction of the Great Wall National Cultural Park, and explore the path of sustainable development. From the perspective of digital intelligence empowerment, a quaternary model of "value-cognition-practice-development" is constructed, and solutions with big data analysis, digitalization, intelligence and other technical means as the core are proposed. Firstly, the internal logic of empowerment is analyzed from four aspects: the cultural spirit of the Great Wall, the value of the times, the construction of parks and the integration of culture and tourism. In terms of practical innovation, it is proposed to archive, protect, develop and manage the whole life cycle of the Great Wall cultural heritage, create a new business format of cultural and tourism integration, and broaden the innovative path of the Great Wall cultural communication channels. Digital intelligence empowers the Great Wall National Cultural Park to bring technological innovation and management upgrades, injecting new vitality into sustainable development; It also allows the people to recognize the cultural heritage of the Great Wall and enhance the spiritual strength and cultural self-confidence of the people.

Key words: digital intelligence empowerment; the Great Wall National Cultural Park; Great Wall Cultural Heritage; internal logic; practical innovation

The Great Wall is a huge cultural heritage with the largest existing volume and the longest span in China. It is a window for the world to understand Chinese culture. Nowadays, although its military role is no longer prominent, its historical value and cultural significance are more important. The Great Wall is a representative symbol of the Chinese nation and an important symbol of Chinese civilization. It is a strict and huge defense system of “horizontal segmentation and vertical stratification ”3.According to the survey of National Cultural Heritage Administration, China's Great Wall remains, involving Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia, Liaoning, Jilin, Heilongjiang, Shandong, Henan, Shaanxi, Ningxia, Gansu, Qinghai, Xinjiang 15 provinces and 404 counties (cities, districts). The Great Wall in China covers the Warring States, Qin, Han, Northern Wei, Northern Qi, Northern Zhou, Sui, Tang, Five, Song, Western Xia, Liao, Jin and Ming dynasties4.

In July 2019, the ninth meeting of China's central deep reform committee deliberated and adopted the “Construction Plan of the Great Wall, the Long March and the Grand Canal National Cultural Park”. The conference

pointed out that the construction of the Great Wall, the Grand Canal and the Long March National Cultural Park is of great significance for strengthening cultural self-confidence and highlighting Chinese excellent traditional culture. The Great Wall National Cultural Park is the most important part of the construction of national cultural parks5.

1.Cultural Heritage of the Great Wall and Its Spiritual Core

The Great Wall is never just a separate wall. The defense system of the Great Wall in Ming Dynasty is a huge system with integrity and systematicness, which is composed of the sidewall subsystem, the tunbingcheng subsystem, the post subsystem, the beacon subsystem, the warning subsystem, the border trade subsystem and the tuntian subsystem6.

The sidewall subsystem is composed of the wall and its enemy platforms, wall platforms, gateways, gates, secret doors, and other facilities (Fig. 1). The main functions are daily observation, organization of small-scale invasion, and transmission of information returned from early warning to both sides and internal beacon towers. The tunbingcheng subsystem is divided into five levels according to the military level from high to low: Zhen City, Lu City, Wei City, Suo City and Bao City. Each city cooperates with each other and undertakes the garrison and combat tasks of the frontier defense (Fig. 2). The post subsystem includes the post station, the delivery station and the emergency delivery shop, as well as the road between the three, forming the traffic network of the Great Wall defense system. The beacon subsystem is connected by the beacon tower one by one, looking at each other from afar, responsible for the transmission of military intelligence, forming a complex and accessible information network of the entire defense system. The warning subsystem is responsible for military intelligence reconnaissance outside the border. The main function of the border trade subsystem is to carry out trade exchange. The border tributary and military activities together constitute the two most common communication states inside and outside the Great Wall. The tuntian subsystem refers to the reclamation of wasteland by the army and the people, which strengthens the construction of border defense, and also solves the problem of food and pay for the large local garrison.

Fig.1 Juyongguan section of the wall of the Great Wall (source: photographed by the research group)

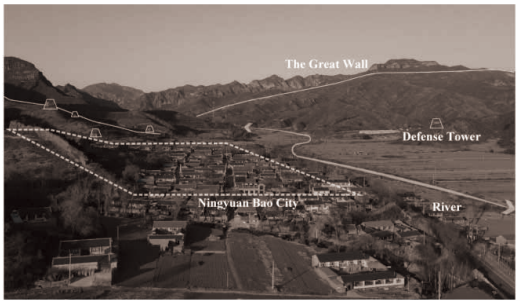

Fig.2 The relationship between the military fort and the side wall and the beacon tower in the Great Wall of Chicheng County, Hebei Province (source: photographed by the research group)

The Great Wall was included in the World Heritage List in 1987. The Chinese nation has created the cultural value of the Great Wall in the historical era. It represents the ancient Chinese border construction, military strategy, engineering technology, border trade exchanges and cultural spirit, and is linked to the overall context of the historical development of the Chinese nation.

Since the Spring and Autumn Period and the Warring States Period, the Great Wall has a variety of forms. In the process of its own development, evolution and improvement, it has formed a unique Great Wall culture (Fig. 3, Fig. 4). It is a great military defense project built in the past dynasties. It is a huge and complex giant system, which shows the development of ancient military

strategy and scientific and technological level, and shows the perseverance and wisdom of the Chinese people. Moreover, the Great Wall also has the value of multi-integration. Its construction has built a long-term peace and ensured the safety of transportation and customs clearance along the Great Wall. Each dynasty controls and maintains the order of agricultural and non-agricultural by building the Great Wall, reduces conflicts between the two sides, realizes long-term stability inside and outside the Great Wall, and also promotes multi-ethnic cultural exchanges and integration.

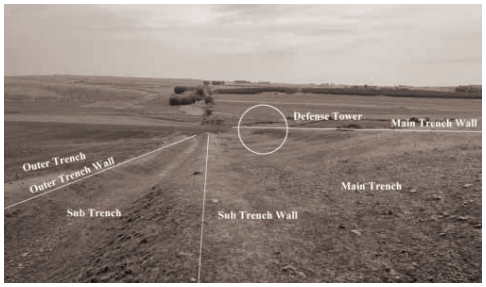

Fig. 3 The present situation of the Great Wall site of the Jin Dynasty in Heilongjiang Province (Source: photographed by the research group)

Fig.4 The present situation of the Great Wall of the Ming Dynasty in Baoding, Hebei (Source: photographed by the research group)

The saying of “three spirits and four values” for the spiritual value of the Great Wall is common. The “Report on the Protection of the Great Wall of China” and “Overall Plan for the Protection of the Great Wall” elaborate on the connotation of spirit and value. The “three spirits” of the Great Wall are: the first is the patriotic spirit of unity and unity and the ambition of the city; the second is the national spirit of perseverance and self-improvement; the third is the spirit of the times of peace, openness and inclusiveness. The “four values” are: the first is to carry the value of the Chinese nation's tenacity and self-strengthening national spirit; the second is to strengthen the historical and cultural value of the cultural self-confidence of the Chinese nation; the third is to show the architectural heritage value of the ancient military defense system; fourth, it carries the cultural landscape value of the integration and interaction between man and nature.

Cultural inheritance and spiritual value are more important to carry forward its intrinsic national spirit, tell Chinese stories well, gather majestic strength, and gather spiritual strength for the great rejuvenation of the Chinese nation.

2.The Great Wall National Cultural Park and Its Characteristics

The Great Wall National Cultural Park refers to a comprehensive park with important historical, cultural and tourism values based on the cultural resources of the Great Wall, with the protection, inheritance and display of the cultural heritage of the Great Wall as the core, combined with the natural environment, cultural landscape and community development, through planning, management and development (Fig. 5).

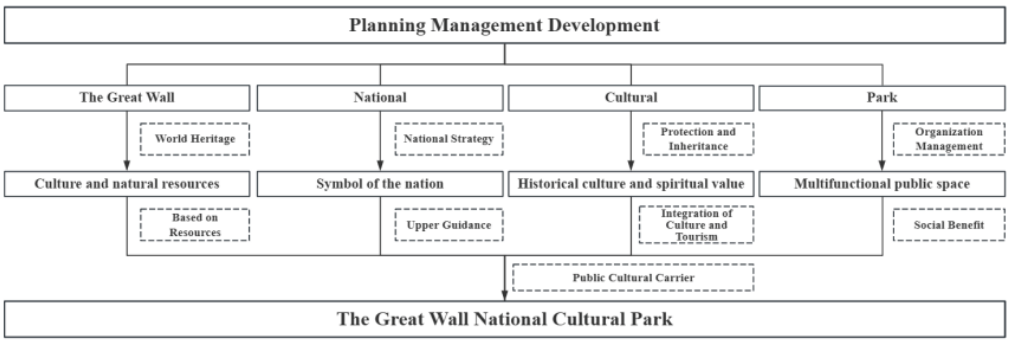

Fig. 5 Concept generation diagram of the Great Wall National Cultural Park (Source: self-drawn by the author)

The Great Wall National Cultural Park is a public space that takes the Great Wall and its surrounding areas as the core, based on rich cultural heritage and natural resources, and realizes the protection, inheritance and utilization of the Great Wall culture through reasonable planning and management. It is a collection of rich and diverse landscape resources, including the Great Wall itself, natural scenery, historical sites, farming culture villages etc. It has the characteristics of rich cultural heritage, unique natural landscape, diverse cultural exchange activities, social education and research functions, and sustainable development. It plays an important role in cultural heritage, tourism promotion, international exchange and social education. At present, China has initially formed the layout of the construction of the Great Wall National Cultural Park. Beijing, Hebei and other 15 provinces have also formulated the construction plan of the Great Wall National Cultural Park, and initially identified 45 national key projects. For example, Hebei Province has also arranged 45 provincial key projects, and 25 projects have been started.

China's “National Cultural Park” is different from the “National Park” in Europe and the United States, and there are great differences in concept.

First of all, the two have different origins. The concept of national park was proposed by the United States in 1832, and the world's first national park, Yellowstone National Park, was established in 18727. National Cultural Park was first proposed by China in 2016. “National Park” originates from the protection of “wilderness”in the United States, mainly based on the theoretical system of “heritage corridor” in the United States, relying on local natural ecological resources and historical and cultural heritage resources, forming a special cultural resource-based linear landscape, bringing economic and social benefits, and widely used in European and American countries. The National Cultural Park is first proposed by China. It is a cultural symbol or a symbol representing regional culture based on historical vision8. In the process of construction, it follows the top-level design of the state-led macro pattern, the emotional connection brought by culture as the essential attribute and root, and the complex function of clear space as the basic logic of organization and management9.

Secondly, the national cultural park is a comprehensive protection of cultural resources, which is national, cultural, integrated, public welfare and representative. It carries the connotation of Chinese culture and is composed of unique cultural resources. It emphasizes nationalization and localization internally, serves to realize the great rejuvenation of the Chinese nation, adapts to internationalization and generalization externally, and emphasizes the value of “cultural community”. It has significant historical, cultural and artistic value, but also has a certain natural environment conditions concentrated display and inheritance of cultural public space; emphasizes the overall national significance reflected by the integration of a series of cultural heritage10; provides the public with a public space to understand, experience, and perceives Chinese history and culture, and encourages the public to participate in the protection and creation; it is highly recognized by the people and is a symbol of national and human civilization. It can reflect the national image and the unique spiritual identity of the Chinese nation.

Finally, the two are different in function and purpose. From the perspective of protection orientation, national parks are one of the most important types of protected areas in China. They belong to the prohibited development areas in the national main functional area planning, and are included in the control scope of the national ecological protection red line area. The strictest protection measures are implemented, and other development and construction activities are prohibited except that they do not damage the transformation of local residents ' living and production facilities and natural tourism, scientific research, education, and tourism; the national cultural park pays more attention to the concept of returning ecology, culture and people, which is characterized by innovation, public welfare, openness and internationality.

The Great Wall has a large time span and a wide range of space. The cultural relics and cultural resources along the Great Wall are dense, and the intangible

cultural heritage has a long history. In the construction of the Great Wall National Cultural Park, all localities have always adhered to the priority of protection and contributed Chinese experience to the protection of world cultural heritage. The construction of the Great Wall National Cultural Park in Beijing has clearly defined the layout of “one line, five districts / areas, and multiple points ”in spatial planning. The five districts / areas will be the centralized area for the display and interpretation of the Great Wall of Beijing (Fig. 6). In the implementation of the project with a strong exploratory such as: pre-study on upgrading project of the China Great Wall Museum; the first archaeological and multidisciplinary protection project in the field of Great Wall protection project, and the research protection project of Dazhuangke Great Wall with traceable records of the whole process. Some have iconic features, such as: 400 kilometers of the Great Wall national scenic road main line and 10 cultural visit lines, as well as tnterpretation system of "The Road to Victory" and "The Great Wall of National Anthem" based on the opening scenic spot of Panlong Mountain Great Wall. Some have basic characteristics. For example, in 2019, the Beijing Great Wall rescue and protection project has been completed, and more than 60 projects have been completed by 2023; The review of the early Great Wall resources in Beijing in the past two years; Great Wall Protector Training, etc.

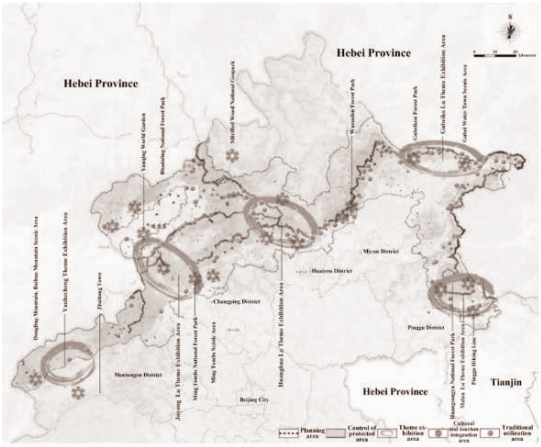

Fig.6 The Great Wall National Cultural Park (Beijing section) scope and four types of functional area planning layout diagram (Source: The Great Wall National Cultural Park (Beijing section) construction and protection planning)

3.Innovative Development of the Construction of the Great Wall National Cultural Park

The construction of the cultural park focuses on scientific protection. From the current situation of the protection of the Great Wall National Cultural Park, it can be seen that there are several problems. First, the volume of the Great Wall is very large, covering most of China's regions in space; Second, due to the influence of natural factors and human factors, the preservation status of the Great Wall ruins is worrying; Third, the protection work is not in place, the Great Wall culture research is not in place; Fourth, the public participation is insufficient, and the Great Wall is huge. Its protection depends not only on the cultural relics department, but also on the strength of the people. The Great Wall National Cultural Park should take scientific protection as the primary purpose, and also pay attention to the protection of the historical and cultural value of the Great Wall, and adhere to the principle of protection first, rescue first, mining value, effective utilization and overall protection.

The construction of the cultural park should pay attention to ecological protection. The Great Wall has been built for a long time. Due to the influence of natural and man-made factors, the preservation status of the Great Wall is worrying. The ecological environment of the Great Wall area is also one of the important contents of the Great Wall protection and one of the key points of the construction of the Great Wall National Cultural Park. First of all, the construction of the Great Wall National Cultural Park needs to be closely integrated with the ecological protection work. Due to various reasons, the ecological environment along the Great Wall is relatively fragile, and it is urgent to carry out environmental governance and ecological protection. The protection work should make a quantitative analysis of the ecological vulnerability along the Great Wall, and take measures to protect soil and water and prevent wind and sand, mainly biological measures, that is, the combination of forest and grass. Secondly, it can promote the integration and development of the Great Wall culture and the natural ecological civilization along the line., combine the protection of the

Great Wall with the natural ecological restoration along the line, strengthen the protection of various facilities of the Great Wall, realizing the integration of cultural ecology, and creating ecological civilization along the Great Wall. Finally, it can strengthen the sustainable development of cultural industry in the areas along the Great Wall, realize industrial transformation and upgrading, promote the high-quality development of cultural industry, and enhance people's well-being while promoting the Great Wall culture.

The construction of the cultural park promotes the integration and activation of culture and tourism. The integration of culture and tourism is the deep integration of cultural function and tourism value, and the Great Wall National Cultural Park has the natural advantage of developing cultural tourism because of its rich cross-regional resources. Through the integration of culture and tourism, we can improve the public's awareness of the Great Wall culture and highlight the spiritual value of the Chinese nation carried by the Great Wall. The integration of culture and tourism can revitalize the cultural resources of the Great Wall and promote the development of far-reaching formats. Among them, the integration area of culture and tourism is the key construction as the main functional area. At the macro level, through the construction of tourism routes, the linear cultural heritage is connected through tourism; at the micro level, more attention is paid to the activation and utilization of segmentation and zoning, and tourism products are designed according to the cultural theme characteristics of different regions11. In the process of activation and utilization, it can be integrated with rural revitalization and poverty alleviation12; Internet emerging technologies can be used in industrial coupling to increase the scale of digital applications; in the construction and development, the cultural industry and ecological construction are integrated to form a symbiotic mechanism14, forming a virtuous circle between protection and inheritance and activation and utilization. At present, there are some problems to be solved in the development of cultural tourism integration, such as the convergence of cultural tourism resources in many places, the inability to guarantee the development and construction funds, and the unclear development strategy. In view of the above problems, some scholars also put forward targeted suggestions. Localities should take culture as the guide and transform resource characteristics into development advantages. They can learn from foreign experience, build local characteristic boutique projects and Great Wall cultural IP, build cultural industry chain, improve relevant systems and mechanisms, promote the continuous adjustment of cultural tourism industry, and ensure the sustainable development of integrated development.

The construction of the cultural park can be integrated with the construction of border areas. The "Outline" of the 14 th Five-Year Plan of the People's Republic of China has set up a column to promote the development of border areas. Promoting the construction of border towns has the significance of promoting regional coordinated development, improving the production and living standards of border residents, and casting a strong sense of the Chinese national community. Some of the Great Wall sections are also located in the border areas, and the integration and development with the construction of the Great Wall National Cultural Park can promote the economic development and urban carrying capacity of the Great Wall area. To promote the integration and development of the two, we should first do a good job in the top-level macro-design, formulate relevant policies in various regions according to circumstances, and take policies as the first step; secondly, we will promote the development of tourism in the two areas, develop characteristic industries in the border areas and combine them with the Great Wall National Cultural Park to develop characteristic tourism products, create local signs and attract tourists to improve economic development; finally, a regional cooperation model can be constructed to improve local people's livelihood and sustainable development through infrastructure construction. Through the combination of government and enterprises, we can integrate resource elements, strengthen the ability of independent innovation, promote the Great Wall National Cultural Park, strengthen the ability of independent innovation, and promote the development of border areas.

The construction of the cultural park needs to strengthen social education and publicity. The

construction of the park plays an important role in social education and tourism promotion. We can strengthen education and research work to improve public awareness and awareness of the Great Wall culture and sustainable development, carry out relevant educational projects and research activities, cultivate professional talents and inherit skills, and provide academic support and innovative ideas for the sustainable development of the Great Wall National Cultural Park. With the theme of the Great Wall National Cultural Park, the activities of cultural communication through literature, radio, documentary, advertising and other means are becoming more and more abundant. According to the different characteristics of different regions and audiences, a series of domestic and international promotional films are launched. It can also establish a multi-lingual cultural promotion mechanism, promote the Great Wall culture, and tell Chinese stories well.

4.Conclusion

The construction of the Great Wall National Cultural Park is an important decision made by the CPC Central Committee and is a strategic cultural project in the new era. It is also the first of its kind in China. It has far-reaching significance for promoting cultural development in the new era, strengthening cultural self-confidence, cultural inheritance, and promoting the integration and activation of culture and tourism. At present, the mode and path of each section of construction are also exploring innovative ways of park construction and management in the future, becoming the source of internal motivation for the sustainable development of the Great Wall National Cultural Park In addition, the construction of the park should implement post-use evaluation. This mechanism encourages the public to participate in the creation and protection, in order to build innovative governance at the management level of central-local co-construction at the construction planning level, which is of great significance for promoting cultural heritage and promoting the integration of culture and tourism. At the same time, it will contribute to the grand goal of building the Great Wall National Cultural Park in 2035 and promote cultural inheritance. The construction of the Great Wall National Cultural Park is of far-reaching significance. We should protect, inherit and make good use of the Great Wall cultural heritage.

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