Study on Landscape Design Strategy of Leisure Space of Mulberry Fish Pond in Shunde

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Abstract. As a local traditional agricultural production mode, the agricultural system of Mulberry Fish Pond in Pearl River Delta has local characteristics and Lingnan style. During the socialist construction period and the rural revitalization, it should be activated and protected because of its outstanding agricultural and cultural heritage value. By analyzing the problems faced by Mulberry Fish Pond at present, this paper puts forward the design method of leisure space of Mulberry Fish Pond by narrative design, and constructs a complete design method, which provides new ideas for future leisure space design of Mulberry Fish Pond, thus enriching its functions and space content while keeping the basic characteristics of Mulberry Fish Pond unchanged.

Keywords: Agricultural cultural heritage; Leisure space; Narrative design.

1. Introduction

Mulberry Fish Pond is a traditional land-use mode and agricultural production mode in the Pearl River Delta region, which has a long history and diverse values. In the heyday of the Mulberry Fish Pond in the 1920s, Shunde, as the cradle of the Mulberry Fish Pond, had an area of over 1 million mu, and 90% of the residents were engaged in mulberry fish production. The Records of Shunde recorded that at the end of the 19th century, Shunde had more than 60,000 mechanical silk reeling workers, with the largest number of industrial workers in China. According to another record, in 1929, 80% of Chinese silk was produced in Guangdong and 80% of Guangdong silk was produced in Shunde.

2. The agricultural cultural heritage value and current predicament of Mulberry Fish Pond

2.1. Agricultural cultural heritage value of Mulberry Fish Pond

Mulberry Fish Pond digs the low-lying waterlogged land into a pond, stores water and raises fish, and piles up soil to form a foundation. It has a variety of organisms such as mulberry, silkworm, fish, livestock, poultry, vegetables, fruit trees, flowers and other animals and plants. In agricultural production, mulberry is planted on the foundation, and mulberry leaves are used to raise silkworms and silkworm excrement to feed fish, thus realizing the organic combination of various production links such as mulberry planting, silkworm rearing and fish farming. After long-term production practice, Mulberry Fish Pond in the Pearl River Delta is the product of long-term adaptation and coordinated development to the local special natural environment, which effectively reduces the loss of natural resources, can not only discharge flood and waterlogging, but also make full use of water and soil resources, increase production and income, and has great ecological value in agricultural production.

The complex and diverse production links of Mulberry Fish Pond bring multi-channel income sources. Mulberry cultivation, sericulture, silk reeling, fish farming, inter-planting and rotation of vege tables, peanuts and corn all can bring economic benefits. The production processes are closely linked, and the waste generated in the former production link is fully utilized by the latter production link, forming a low-cost, low-input, high-efficiency circular production. At the same time, rich and colorful diet, clothing and food are derived, inherited and developed.

2.2. Present situation and predicament of Mulberry Fish Pond

1.2.1 The development and decline of Mulberry Fish Pond and its cultural decline

At present, the total amount of Mulberry Fish Ponds in the Pearl River Delta is less than 200 hm², scattered in Shunde, Nanhai and Huadu. Since the outbreak of the world economic crisis in 1929, the raw silk market has been depressed and the Mulberry Fish Pond in the Pearl River Delta has declined rapidly. By 1949, the total area was only 1.2×104 hm², less than 1/10 of that of 20 years ago. After 1980s, with the rapid development of industrialization and urbanization, changes in industrial structure and land use patterns, and aggravation of environmental pollution, Mulberry Fish Pond in the Pearl River Delta gradually shifted to areas with low urbanization level and replaced it with flower-based and vegetable-based land, which was transformed into industrial land or urban construction land. Relevant material and intangible culture gradually abandoned or disappeared, silkworm production houses were mostly demolished or transformed, mulberry fish production equipment was abandoned, traditional production skills were gradually lost, and folk beliefs and festival etiquette were also abandoned.

2.2.2 Inheritance fault and cognitive misunderstanding of Mulberry Fish Pond

As a special agricultural landscape and production mode, there are faults and misunderstandings in people's notions of Mulberry Fish Pond. The main problem lies in that people pay attention to the tangible value of Mulberry Fish Pond, while the intangible value is neglected, for example, paying attention to immediate interests and economic benefits, while the unique ecological effects, cultural effects and cultural heritage values are not universally understood, and the long-term benefits generated by Mulberry Fish Pond are not deeply discussed and effectively promoted.

3. Internal structure of Mulberry Fish Pond

3.1. Circulation pattern and substantial spatial relationship of Mulberry Fish Pond

The foundation pond can be divided into mulberry base and fruit base. Mulberry Fish agriculture is the Mulberry Fish model, that is, the Mulberry Fish Pond. Mulberry Fish Pond is a kind of production and planting mode which combines mulberry leaves to feed silkworms and silkworm excrement to raise fish in fat pond, thus forming the circulation mode of Mulberry Fish Pond. In the structural circulation mode of Mulberry Fish Pond, this paper is divided into five aspects, including animals, water, plants, environment and farmers. In the five aspects, the interdependent and combined circulation structure is that fish survival depends on water, and fish and some microorganisms react on the ecological purification of water; Water nourishes plants on the substrate, and the conservation and purification functions of plants react to water; Plants can regulate and beautify the environment, and the environment feeds back greening; Farmers participate in the environment, and a good environment can make people decompress and refresh themselves; There is also the symbiotic relationship between breeders and animals; From these five aspects, the balance, regulation and circulation in the pond model are derived, which are connected with the "ecosystem toughness" proposed by ecologist C.S Holling, and form the elastic circulation model of Mulberry Fish Pond. The soil on the water base and the water in the pond are used and combined with each other. The path beside the pond is called roadbed, while the base is used as the planting space for mulberry trees in the Mulberry Fish Pond. Silkworm houses are scattered and used as production space. Pond mud is used as fertilizer for planting mulberry trees, mulberry leaves are used for sericulture, and silkworm excrement and pupa are used as fish bait.

3.2. Living and Leisure Space in Mulberry Fish Pond

Most farmers' houses are built near the existing farming fields. Because the Mulberry Fish Pond covers a large area, there are many farmers belonging to the fish pond, and then a small settlement is formed. For the convenience of feeding and fertilizing fish, farmers usually build storage rooms in

places with crisscross roads and large subgrade areas, which are used to store fertilizer and fish materials for planting plants, and sericulture rooms are arranged in scattered spots. Due to the outstanding problems of air quality and environmental sanitation, the proportion of foundation ponds in Mulberry Fish Pond is gradually out of balance. Now, except for planting plants on both sides of the foundation, the middle open space is only for traffic. It can be seen that there is a lack of leisure space in Mulberry Fish Pond, and farmers have no other activities except fertilizing and feeding fish. Most of them focus on the construction of Mulberry Fish Pond itself, but there are few cases in which farmers interact with tourists and tourists experience activities themselves. In recent years, Mulberry Fish Pond in Shunde has gradually faded out of people's sight, and Mulberry Fish Pond is no longer planted with mulberry. For farmers who manage Mulberry Fish Pond, leisure and entertainment space only exists outside Mulberry Fish Pond. One civilization nurtures the other land, so why not build the tourism planning of Mulberry Fish Pond from itself? If tourists are placed in the foundation pond, enjoy themselves with the breeders, walk with the culture, and integrate popular science education and practical experience into tourism and leisure, for the breeders, working in the land where they can relax and entertain can achieve the work mode of combining work and rest. For tourists, playing in a scenic spot that can be learned and practiced can achieve the best effect of learning while playing and playing while learning. As far as culture is concerned, learning and inheriting farming culture during the tour can make people know about Mulberry Fish Pond and experience agriculture.

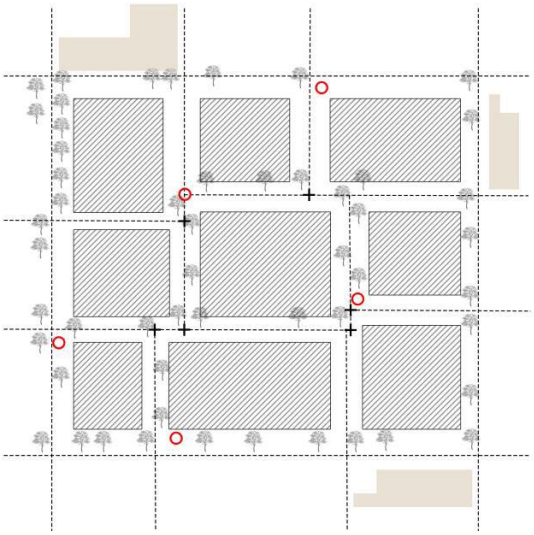


Figure 1. Spatial structure of Mulberry Fish Pond

4. Narrative landscape of Mulberry Fish Pond

The so-called narrative, that is, telling stories, is a way of expression. As the most basic expression of human beings, it is a form of connecting different characters, events, props and scenes in time and space in series, and a way to acquire knowledge by accident of behavior and experience. Landscape narration tells a story by arranging the sequence of landscape space. Narrative landscape can construct thematic or regional landscape by naming, sequencing, revealing, gathering and other narrative techniques, and spread the design information to participants. Landscape narration expresses emotion and culture, and is not limited to a specific function. Designers use narrative design to create landscapes. Landscape and stories interweave and merge, which makes this series of stories collide with the behaviors and feelings of participants, and builds a relationship of trust and intimacy. Then this landscape space becomes the carrier of stories and is endowed with narrative value, so it can be said that it is narrative.

4.1. Application value of narrative landscape

4.1.1 As a tool to reshape culture

Cultural connotation is the indispensable identification of landscape space. Norberg Schultz, a Norwegian architectural theorist, thinks that space has feelings, which are closely related to the fragments of daily life. Fragments of daily life are fragmented, while culture is composed of these fragments of daily life, which has a broad mass base. Narrative design is the technique of arranging stories, activities, scenes and props with limited information in time and space. The narrative design is used to connect the themes of history, tradition, folklore and daily life in the cultural context to form a fluent readable symbol system. By using this system, the cultural information is integrated into a series of landscape spaces, and the landscape spaces are endowed with rich meanings and design forms. This form is not only a sense of form itself, but a story that can be read and has emotions. Narrative design shapes culture into a visual image, which interweaves skillfully with each other, and the cultural connotation will be hidden in landscape design. To create meaningful and participatory landscape space, it is necessary not only to transcend the natural attributes of the site itself, but also to inject cultural attributes into the site. Narrative design plays a unique role in cultural landscape design, making it possible.

4.1.2 Strengthen the effect of tourism education and popular science

The landscape space composed of narrative structure strategy does not show the visual artistic effect purely. The feeling of this landscape space can only be obtained by deep trust cultivated by communication and dialogue between participants and landscape subjects, and visitors are encouraged to participate in activities and experience different spaces in the narrative space. Participants can get different types of hidden information, which is incomplete, leaving a vacancy for people to guess, and is directly related to visitors' own past experiences. Different participants can get different feelings. In the design practice, taking historical narration as the breakthrough point, a place of indirect participation in history is constructed on the Mulberry Fish Pond in Shunde through "visual image", "characteristic place" and "tourist experience". For example, a series of Sanki culture, the display of historical visual images of Sanki and the overlooking platform for people to pause and guess. This kind of landscape space is vivid and profound, in which participants not only browse scenic spots visually, but also the narrative plot will stimulate participants' desire to explore psychologically and continuously, and participate in the process of supplementary interpretation of incomplete information. Questions stimulate thinking, and thinking triggers exploration, so that participants can learn continuously during exploration, enabling people to realize the intrinsic value of Mulberry Fish Pond, an agricultural cultural heritage, from the landscape environment, so as to bring into play the effect of popular science education.

4.2. Narrative Strategy of Landscape Leisure Space in Mulberry Fish Pond

4.2.1 Collecting Symbols and Constructing Semantics-Presentation of Precipitation

Narration begins with sentences, which are made up of language. Symbols are the basic carrier of language, and symbols are meaningless. Only symbols endowed with meanings can be used correctly, and then language can be transformed into information, and the meaning of language is semantics. Semantics can be regarded as the meanings of concepts corresponding to data in the real world, and the relationship between these meanings. In the design narrative strategy, this requires us to re-understand the narrative as a system composed of scattered semantics in the same field, analyze and interpret the design site in depth, analyze, sort out and summarize the different types of materials needed into design symbols, reshape the relationship between semantics and symbols, and finally form a process of accumulating materials for preliminary narrative design, which is also the first step in landscape space design.

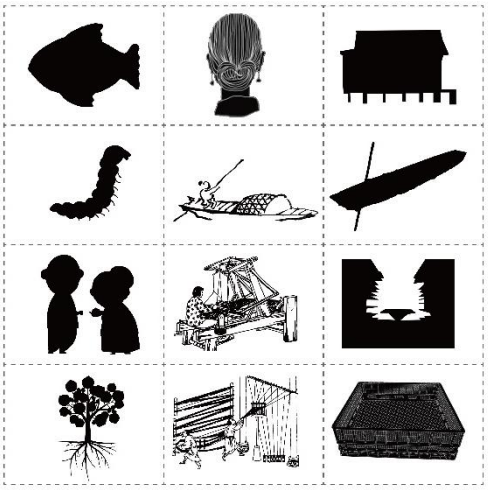


Figure 2. Mulberry Fish Pond symbol

Semantics have domain characteristics, so in the process of constructing semantics, we should understand that the same thing has different understandings in different fields. The design of Mulberry Fish Pond should be from the local area.

The materials of Mulberry Fish Pond are collected from the materials that can represent its characteristics, from which we can understand the meanings of its things, coordinate according to the explanations of the same things in its field, and rearrange its narrative sequence. The narrative structure will affect the semantics contained in the final design results, and the narrative sequence can be divided into four types: sequence, flashback, interlude and supplement. The designer adopts different sequences to give the structure a more orderly arrangement of meaning. The ongoing structure itself cannot be divorced from semantics, and the integrated image, plot, background and story are all factors that affect semantics. Therefore, the designer should take the construction of semantics itself as the ultimate goal throughout the narrative.

For Mulberry Fish Pond in Shunde, the extraction of symbols can be silk-like zigzag figure, mulberry shape on roadbed and fish configuration, etc. Abandoning, copying and unilaterally restoring the original symbol body can be translated into sunshade in landscape, structures in leisure space and rest facilities for participants to rest through modern design techniques, and "grow" on Mulberry Fish Pond with a new look. There are important spaces scattered on Mulberry Fish Ponds in Shunde, such as the storage room built at the intersection of sericulture room and road. In landscape design, the scattered distribution patterns can often be extracted, a 10m * 10m virtual orthogonal grid is laid on Mulberry Fish Ponds, and space experience devices are arranged at the intersections of orthogonal grids. The relative proportion is also one of the important semantics in Mulberry Fish Pond. By changing its relative proportion and combining different narrative sequences, participants can better experience the interweaving relationship among past, present and future of Mulberry Fish Pond.

4.2.2 Establishing Spatial Order-Stage Change

In narrative design, the specific form of space is not the most critical, but when participants walk along the viewing route and garden road, or come into contact with the specific landscape space, so as to stimulate specific emotions. Design is not to design people's emotions, but to construct plots through the semantics formed in the early stage. Plots give more orderly arrangement to events and actions in environmental space, arrange possible changes at the beginning, build subsequent scenes and create atmosphere, sum up stories at the end, and explain past events. Landscape narrative can't be separated from the process of media itself, and it is designed according to the space rhythm, use function and movement law by using specific visual symbols, staying space and plant arrangement. Such design often emphasizes organizing the iteration before and after landscape space with specific

logical relationship, giving participants the power of foresight or hindsight which is unlikely in their life to construct plot landscape space, and gradually realizing the meaning in space. Deviate from and play with the structure of time sequence, and accurately express our life experience with its disordered, accidental, circuitous and unnecessary information. The combination of characters and venues, and the combination of plots and stories are the means to understand and interpret landscapes. Through constant scrutiny of narrative, reinterpretation, reappearance and reconstruction, and iteration of layer-by-layer relationship, the landscape becomes active, and the landscape as a venue becomes visualized because of plot and story.

In the landscape design practice of Mulberry Fish Pond in Shunde, the possible changes were initially arranged with plant arrangement as the leading factor, and different flowers formed different textures, which was fascinating. Subsequently, the scene was arranged on Mulberry Fish Pond, and the participants carried out more experience activities and parent-child activities in this area, which had a relationship with the production activities of Mulberry Fish Pond. At the same time, the historical events and culture of Mulberry Fish Pond are placed in a small experience device in the form of visual images, so that participants can feel the forgotten historical events and culture. After the first three stages, the participants were put into a semi-open platform to quietly overlook the Mulberry Fish Pond and immerse themselves in thinking. The "end of the tour route" restores the site to the conventional proportion of "four waters and six bases" in the 1920s and the virtuous circle three-dimensional ecosystem, so that participants can have a clearer understanding of the wisdom of the ancients for agricultural production and sublimate the whole story.



Figure 3. Narrative layout plan of Mulberry Fish Pond landscape

4.2.3 Dialogue with Subject-Open Ending

In a complete story line, the audience will always get an ending. As the author, he has the right to master the direction of the ending, but one is different from other endings-open ending, which has no real ending, but is set by the audience according to the story process and their own ideas. In real life, people are used to erasing the complexity of history and association in a simplified way, so even if designers design more complex and meaningful designs, people will always simplify their possible and decoded interpretations. The solution is to adopt an open ending. The word "open" transforms the ending from the designer's hand to the participant's hand, so that the participant can talk with the landscape subject, make it convenient for the participant to supplement and complete, and form his own unique understanding. In the space where discourse and cross-text interweave, the meaning of diversity, ambiguity and polysemy is produced. During the tour, the experience device and the designed spatial order continuously provide people with complex information, while various overlooking platforms and "extreme ends" are regarded as "breathing spaces", which make people think about the landscape and intrinsic value of the former Mulberry Fish Pond while stopping digestion, and think about where to go in the modern society. In landscape design, the designer's task is only to provide participants with a carefully arranged chance encounter, so that participants can become the dominant factor of landscape space, and stimulate people's feelings and imagination

through the behavior pattern guided by space and the possibility of growth and change of this pattern, so as to complete the original purpose of the design.

5. Conclusion

With the rapid development of the city, the agricultural production value of the Mulberry Fish Pond landscape in the Pearl River Delta has been negligible, and the traditional Mulberry Fish Pond landscape and silk reeling industry have disappeared, gradually fading out of people's vision. With the increasing attention to cultural landscape, agricultural local landscape tourism with Mulberry Fish Pond as its gimmick has been gradually developed, and the awareness of agricultural cultural heritage and cultural landscape heritage has gradually awakened. Compared with the overall restoration of Mulberry Fish Pond, it is more feasible to intervene in the inheritance of collective memory of agricultural cultural heritage, Mulberry Fish Pond by means of landscape design. Taking historical narrative as the breakthrough point, a place that can indirectly participate in history is formed through "visual image", "medium connotation", "characteristic place" and "activity participation". It is one of the best choices at the present stage to restore the landscape of the former Mulberry Fish Pond in local Jitang area, translate the symbols and semantics of Mulberry Fish Pond in a modern way, build a new spatial order of Mulberry Fish Pond, reshape its composition system, and build a theme cultural tourism area of Mulberry Fish Pond.

References

[1] Zhou Qing. Narrative design strategy of public art [J]. Grand View of Fine Arts, 2020(11):108-110.

[2] Hu Lihui, Li Shuhua, Liu Jian, Wang Zhijing. Extraction of local landscape symbols and its application in local landscape construction [J]. Small town construction, 2009 (04): 72-77

[3] Meng Linghui. On the narrative design of landscape [D]. Beijing Forestry University, 2009.

[4] Tuo Ling. Research on narrative design strategy of Rural Tourism Landscape [D]. Huazhong University of science and technology, 2013

[5] Zhai Jianke. Narrative research on landscape space design [D]. Xi'an University of architecture and technology, 2010

[6] Wang Siyuan, Liao Sentai, Zou Yuxiao, Lin Guangyue. Jitang agricultural system in the Pearl River Delta Based on the perspective of Agricultural Cultural Heritage [J]. Agricultural engineering, 2019,9 (12): 116-120

[7] Guo Shenghui, situ Shangji. The value and protection and utilization of Mulberry Fish Pond in the Pearl River Delta from the perspective of Agricultural Cultural Heritage [J]. Tropical geography, 2010,30 (04): 452-458

[8] Meng Xiaohui, Ji Jialong, Xu Jin. Research on the application mode of regional cultural symbols in landscape design [J]. Science and education culture collection (last xunya), 2012 (12): 141-142

[9] Tian mengxiao. Aerial observation of contemporary foundation pond Landscape [J]. Landscape design, 2019,7 (04): 130-138

[10] Chen Yanqun. A new model of urban and rural spatial ecological planning -- a new chapter of Mulberry Fish Pond -- Exploration on master planning of Xingtan town, Shunde City, Guangdong Province [J]. Small town construction, 2005 (06): 19-21

[11] Wu Zeying. Mulberry Fish Pond. Grid [J]. Guangdong garden, 2008 (02): 26-29

[12] Zhou Xinnian. Study on local society and collective space in Shunde [D]. South China University of technology, 2018

[13] Matthew bottig, Jamie plington. Landscape narrative: design practice of storytelling [M]. China Construction Industry Press, 2015