

The ecological significance and construction form of forest school

YAN Jing, YIN Man

Gold Mantis School of Architecture ,Dushuhu Campus, Soochow University, No. 199, Ren'ai Road,
Su Zhou City, Jiang Su Province, PRC

Gold Mantis School of Architecture ,Dushuhu Campus, Soochow University, No. 199, Ren'ai Road,
Su Zhou City, Jiang Su Province, PRC

yanemilia@126.com,59687708@qq.com

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Abstract: In order to protect the increasingly gradually scarce forest resources and ecological resources in the urbanization, the forest construction has become an important measure to promote the greening and beautifying of the urban and rural areas at the present stage of our country. Forest construction involves all aspects of ecology, industry, culture and so on. The forest school integrates the outdoor culture and education into the forest construction. It fully relies on the forest landscape and natural resources to inspire children, while they appreciate, perceive and understand the forest, to improve the consciousness of protecting the forest and caring for the nature. The outdoor education is not only the perfection and supplement of traditional education but also a new way to develop the culture of rural tourism.

The construction of urbanization has gradually accelerated, and the number of high-rise buildings has risen one after another, and the woodland coverage in urban and rural areas has gradually decreased. As of 2015, the forest coverage rate in China was about 21%, far below the global average of 31%. In the process of urban and rural space planning in China, it is important to pay more attention to the proportion of urban land and rural forest land, and to maintain the sustainable development of the countryside. Therefore, in order to protect woodland resources, forest construction involving ecology, industry and culture has become the main objective.

The urban children in China lack outdoor education, which often leads to a series of physical and psychological problems. So the forest schools will make use of the outdoor environment of the existing urban and suburban forests, and let the children take the forest as a classroom, move the indoor desk to the outdoor, and explore the knowledge in the nature. At the same time, the construction of forest schools, adhering to the design principles of less destructive and low structure, focuses on the interaction between parents and children in nature and the experience of DIY devices, which are the characteristics of the forest schools. In addition, we should protect the natural environment of forest soil, maintain ecological balance, and carry out ecological restoration for rural space.

Based on this theory, taking the construction of green forest school as the goal, the concept of green ecology will be integrated into every link of forest school construction. In building transformation, plant selection, terrain restoration and landscape improvement, we will focus on building an ecological and healthy environment for sustainable development. At the same time, we should also

insist on different times and vary from place to place, determine the forest education projects suitable for local development, and promote new ideas for the development of the local beautiful countryside.

Different countries and regions have different views on forest value, but they all attach great importance to the development of ecological sustainability. The forest resources in Germany are ranked in the forefront of the world. Through legislation and a series of technical studies, the country puts the sustainable ecological development of forests in the first place, and they also pay great attention to the inheritance of forest culture. In Britain, forest area accounts for about 13% of the total area of the country. Britain has always attached importance to biodiversity conservation projects, and also to sustainable forest ecological development. Since the British sociologist Ebenezer Howard proposed the green "pastoral city" concept, Britain has made efforts to create a beautiful eco city designed to create health, life and industry, with the aim of reproducing the rural landscape.

In developed countries such as Europe and the United States, forest resources are relatively abundant. Many cities are built in forests, reflecting the characteristics of cities surrounded by forests. In 1762, Rousseau put forward the idea that "good education depends on the organic combination of three kinds of education, the organic combination of natural education, human education and thing education" [1] in the book "Emile: on education". Learning nature, developing people's imagination and creativity. These ideas laid the foundation for today's forest school education.

The famous "Green fairy tales" originated from the German folk, reflecting the ancient culture. Many of the stories described in many chapters are in the forest, such as the three dwarfs in the forest. 1/3 of the land in Germany is the forest, and the first forest nursery was created by German educator Froebel, who advocated that children should play in nature. So Europe set off a wave to go outdoors and went into the nature to learn, and greatly promoted the emergence of Modern Forest Education Concept on the basis of "naturalism" education. In 1930s, British scholars put forward a concept of open education. In the late 1950s, all kinds of outdoor schools blossomed everywhere in northern Europe, and the modern theory of forest education has been supplemented and developed unprecedentedly.

China is the most populous developing country in the world. With the common acceleration of the chemical industry in the city, the demand for the ecological environment is growing. The slogan of the natural ecosystem and the green building is also louder. However, increasing desertification and the poor quality of urban and rural environment, have posed a serious threat to the ecological security of the country. At the same time, many cities are facing traffic congestion, lack of woodland, sustainable development of urban ecology and low living environment. In addition to being concerned about forest resources, we should also pay attention to the multi-function of forest resources, for example, through its function of playing and education, promoting the development of forest education activities, speeding up the construction of the concept of ecological civilization, and helping the revitalization of rural culture. Because traditional rural tourism often has more artificial traces, there is also lack of guidance for children's nature. And forest schools are giving children sufficient autonomy to explore and discover themselves. They get all kinds of direct or indirect experiences in nature and society.

On the other hand, the present situation of education in China is in a state of high pressure, and the children's childhood is "imprisoned safely" on a campus surrounded by the Quartet wall and iron fence to accept the moral, intellectual and physical education, which is not conducive to their physical and mental health growth (Fig.1). Children need to take part in more outdoor activities. Their desire for nature, childlike curiosity, craving for knowledge and creativity are all valuable. In 2006, the "global society future" Organization predicted that "natural deficiency syndrome" would become an important threat to children. These problems are related to children's overload in school, premature departure from nature and loss of life color.



Fig. 1

Compared with the developed countries, the construction of forest culture in China started relatively late. There is a big gap between it and the ecological civilization and the development goal of the beautiful China, as well as the ecological and cultural needs of the people. Therefore, in view of the present educational situation in China and the experience on the forest education model, the model will be implemented in the large area of forest environment in our country, which may become a new direction of the education reform, and the birth of the forest school will have a broader development prospect.

With the strategy of Rural Revitalization put forward by the 19th CPC National Congress, and the twenty character policy of "industry flourishing, ecological livability, rural civilization, effective governance and affluent life", our country should place equal emphasis on both the ecological civilization and the strategy of Rural Revitalization. While promoting the diversification of education, the forestry resources are protected. Through play and education, the development of forest education activities will be promoted, the concept of ecological civilization is accelerated and the countryside is rejuvenated.

At present, towns with special tourist attractions and rural tourism are important contents in urban planning and construction. As a city with rich resources, Suzhou also has unique water resources such as Jinji Lake and Yangcheng Lake. In order to promote the construction of new urbanization and ecological sustainability, through an excellent case study on the development of both woodland and the education abroad, a new kind of rural tourism culture construction project, that is, the outdoor forest education, is also developed in the woodland area around Yangcheng Lake in Suzhou.

Forest education is an outdoor learning process in a woodland environment and a practice to provide children with the opportunity to experience themselves in order to develop their self-confidence and self-esteem. According to their own nature and will, we can explore the surroundings in order to cultivate the sustainable development of the concept of ecological civilization and promote the emotional and personality health of the children.[2] Through the forest landscape and natural resources, the relationship between children and the forest will become closer by watching, perceiving and understanding the forest through the way children look, hear, smell, touch and think in the forest. On the one hand, when they enjoy the beauty brought by nature, on the

one hand, they raise their awareness of protecting forests and caring for nature. In this way, forest education will be a special social education, and it will also be a complement to traditional education.

Suzhou forest school is based in Suzhou, Jiangsu. It is located in a forest of the “beauty’s legs” of Yangcheng Lake. It faces Yangcheng Lake in the West and abuts city road in the East. The surrounding verdant trees, The surrounding verdant trees, make a beautiful, pleasant environment, and excellent natural conditions (Figure 2). It has an area more than 300 mu and is the first natural forest school in Suzhou, and also the first one in China. It has a forest classroom, garden, special restaurant, tree house, lakeside field, social kitchen and other teaching places, such as organoleptic education, farming practice, forest literature, forest mathematics, wetland physical ability, forest drama, life skills and other special courses. Due to being so close to the vast waters of Yangcheng Lake, there are many kinds of verdant local plants in Suzhou, with unique natural scenery. Compared with the commercial development of Jinji Lake and Dushu lake, Yangcheng Lake still retains rural scenery and green ecological environment. The forest school is different from the classroom space in the traditional education model, and has its unique space characteristics because it has been designed based on the children's own perspective and the behavioral and psychological characteristics.



Fig. 2

The barefoot garden at the entrance landscape area mainly consists of six small nodes, such as barefoot mound, frolicking lawn and characteristic flower border. The barefoot garden integrates “barefoot therapy” and sensory education into the field with fluctuating small mound, so that children can run and play on it, and can also stand on the top, looking into the distance. So far, a lot of them have been built. Children, by running, hiding and seeking in the region, can get closer to the land, improve their agility and exercise balance. There are zoos, gardens and mazes in the farming landscape area. Through planting and aquaculture, children can cultivate their love so that they can get close to the land, close to animals and get close to nature. The site is designed with high and low plots and undulating roads, which will enhance the interaction between children and animals. In the forest landscape,

there are pavilions and corridors, stage and other nodes, and a long T-shaped platform. When children graduate from the forest school, they can make a graduation



Fig. 3



Fig. 4



Fig. 5

show on T-shaped platform. These stages and platform also serve as a forest theater and educational demonstration. The wetland area and forest camping area at the lakeside have the ecological protection area for birds, animals and special wetland plants, and people can see the beautiful scenery of the wetland around 360 degrees, which will stimulate children’s idea of protecting the ecology and the nature. (Fig.3, Fig.4, Fig.5)

The unique rustic atmosphere and natural environment are peculiar to the forest school. The unique charm of the interior of the field, include tree house, farming place, zoo and so on, which creates a different outdoor activity space different from the city park. In addition, it has a unique role of natural education. The forest schools can provide extracurricular activities for children, there are still some lack of education on natural contact and understanding of the environment. The natural plants in the forest school have formed a stable ecosystem and ecological community. The children can truly feel the phenology, season, weather and so on. More importantly, the application of woodland environment can make up for children's lack of close contact with woodlands in urban areas. The forest school is not only a place for children's entertainment, but it plays a prominent role in ecological education and the educational function of nature. Finally, all kinds of activities in the forest schools involve a high degree of interaction and participation, and the children will develop sensory experiences under the guidance of the parents and teachers. Building tree houses, farming and harvesting activities will be a wonderful memory for children's life. Building a forest school in person and seeing the beautiful flowers they plant and irrigate in the forest school are not what the amusement park and public park in the city could imagine.

Forest school, a new concept of the rural tourism culture industry, effectively make use of the forest land resources without destruction use to the full the natural materials to build the classroom of the nature, to provide the children with an outdoor activity place. At the same time, it will reduce the dilemmas of reducing urban space, encourage children to grow up actively and healthily, give children the sense close to the nature, breathe the fresh air that is difficult to find in the city, and hold the sense of freedom brought by the green jungle, which will provoke them to protect nature, love nature, and provide the most advantages of the geographical environment.

The forest school is supported by the policies made by the 19th CPC congress and government, and forms the spatial pattern of saving resources and protecting the environment. On the one hand, the forest resources are protected, the related natural environment is restored, and the natural environment will become peaceful, harmonious and beautiful. [3]On the other hand, through the revitalization of rural tourism to develop forestry resources, it will attract more people to the countryside, providing more human resources and economic resources; it will also cultivate the next generation's natural ecological civilization concept. The two complement each other, which is a win-win choice.

As the pioneer of forest education model, Suzhou forest school takes the national tourist resort Yangcheng Lake as the background with the characteristics of its own resources to make rational identification and scientific development to promote the transformation and development of regional tourism mode, promote the common development of urban and rural areas, and promote the development of rural economy. While paying attention to the protection of natural resources, it also continues the inheritance of Suzhou's local characteristic culture. By protecting the natural resources of Yangcheng Lake and combining the native culture of Suzhou, the Suzhou forest school has made up for the lack of nature in the city and the lack of natural experience in China's education, and introduced a new outdoor education model for the education system in China. [4]In view of the relatively pristine sites, we adopt the principle of reducing human interference, taking the principle of less destruction, multi-experience and low structure, making a different natural space with other waters (such as Dushu lake and Golden Chicken Lake), and introducing the direction of Forest

Education into the beautiful countryside construction. It will help explore the new road for the construction of beautiful countryside.

Therefore, we should promote the development of Forest Education and fully explore the local historical and cultural elements on the basis of full analysis of the natural landscape characteristics of every Forest Park. In the design of site environment, we should restore the natural ecological landscape and focus on the feelings of children.[5] In the forest restoration and reconstruction, the original terrain, soil and vegetation should be combined with natural light, natural ventilation and precipitation to create a green environment full of natural atmosphere. Through designing, we can create a sense of vision, touch, hearing, smell and taste to enhance the understanding of the nature, to cultivate their harmonious coexistence with nature and to protect the ecological consciousness of nature.

To sum up, with the promotion and implementation of forest schools and forest education, the strategy of Rural Revitalization can be carried out well, more material wealth and spiritual wealth can be created to meet the growing needs of the people, and more quality ecological products can be provided to meet the growing and beautiful ecological environment of the people. For Chinese children, the traditional education concept can not fully adapt to the development of the times. It is desired to promote the diversification of the domestic teaching system through the new education of the forest schools. From the new perspective of urban and rural planning, we will inherit the construction of ecological civilization and realize the concept of beautiful new countryside. Therefore, how to make the new thinking of the construction of the forest school become a new direction of the development of the rural tourism culture in China and is a subject that needs to be studied. It needs the support of the government and the research and exploration of the people concerned.

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