

LETTER TO THE EDITOR

Individualized Layout Scheme of Agricultural Garden Greening Landscape Based on Tourism Psychology

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Taking function orientation, spatial layout, agricultural characteristics, traffic organization, scenic spots, service facilities and vegetation landscape as individualized design indicators of greening landscape in agricultural parks, the weight of influencing factors was determined by analytic hierarchy process, and the rationality of the design was evaluated. The results show that the degree of differentiation is good, which can provide decision-makers of urban leisure agricultural park projects as the basis of choice, and promote the sustainable development of urban leisure agricultural park.

Tourism Psychology; Agricultural Park; Environment; Greening Landscape; Art Design

1 INTRODUCTION

In recent years, urban agriculture in China has developed rapidly. Urban agriculture refers to the modern agriculture which is located in the middle of the city, the suburbs of the city and the metropolitan economic circle and closely relies on and serves the city to meet the needs of the survival and development of modern cities. Urban leisure agriculture combines agriculture with tourism and leisure. It has the functions of ecological environment protection, recreation, science and technology demonstration, education and leisure. Around big cities such as Shanghai, Beijing, Shenzhen and Suzhou, a large number of urban leisure agricultural parks have been built, which are very popular with the public. But in the process of development, there are also some problems, such as inaccurate positioning, lack of characteristics, backward facilities and other factors, resulting in poor management and huge waste. In project construction, the failure of planning is 100 times more than design. The failure of design is 100 times more than construction. The rationality of landscape planning scheme is decisive to the success of the project. Therefore, in the initial stage of landscape planning, market research should be done to demonstrate its feasibility. ZhengXie published an article entitled “Key Factors Influencing Landscape Design in Informatized Urban Development” in the Journal of Ekoloji on Issue 107 in 2019, which contained 382 volumes with a recovery rate of 76% (Xie 2019). Research results: 1. In secondary evaluation, the most important aspect is “ecological principle”, followed by “consideration principle”, “applicable principle”, “economic principle” and “economic principle”. 2. Among the 15 evaluation indicators, the most valuable first five indicators are: reducing impact, improving environment, characteristics, environmental trends and supporting greening. On this basis, some suggestions are put forward to improve the overall quality of sustainable development environment through rational planning to achieve environmental planning and overall design. In addition, some scholars have done some research on it. Wang (2016) takes agricultural landscape as the research object and green building evaluation system as the guiding

criterion and principle, this paper analyzed the problems existing in agricultural landscape planning in China, summarized the domestic and foreign green building evaluation system, and discussed the relationship between agricultural landscape planning and green building evaluation system. The specific theory and method of agricultural landscape planning were discussed (Sharifuzzaman et al. 2017). The main examples are energy-saving and energy-utilizing based on roof greening design, water-saving and water resources utilizing characterized by rainwater collection system. It is proposed that the seepage surface combined with greening and paving should be adopted in the utilization of materials and materials to reduce the impact of building materials on natural runoff and effectively solve the heat island effect. Taking Nude Valley Resort in Mogan Mountain in Zhejiang Province as an example, this paper demonstrates the application of green building technology in agricultural landscape planning from three aspects: energy saving and energy utilization, water saving and water resources utilization, material saving and material resources utilization. Ye (2017) takes Yingtian City as an example, this paper evaluates the suitability of construction and development and the comprehensive quality of cultivated land with the help of GIS platform. Based on the two evaluation results, this paper studies the coordinated and optimized layout of urban space and agricultural production space. The urban development edge is formed by four revisions: the prediction of urban development direction, the scale of new construction land, the protected area of basic farmland and the national utilization of cultivated land (Barros et al. 2017). The preliminary plan of the boundary and basic farmland protection red line is to make spatial decision according to the principle of coordination of spatial contradictions and optimize and coordinate the spatial layout of urban space and agricultural production. Based on the above research results, this paper will study the individualized layout of greening landscape in agricultural parks from a new perspective.

II IDEA DESCRIPTION

Tourism motivation is the driving force that directly promotes people's tourism activities. With the improvement of disposable income level and the popularization of new educational concept, people are more willing to invest part of their income in tourism. Participating in tourism can enrich their vacation life, reduce the pressure of study or work, and effectively regulate their emotional tightness while perceiving and experiencing the outside world, increasing their knowledge and aesthetics. As one of the hottest tourist attractions, agricultural parks are a problem that needs to be solved in a reasonable and individualized way. The tourism attraction of leisure sightseeing agricultural park is composed of the pulling force of agricultural landscape resources, the push force of tourists' tourism demand and the auxiliary force of agricultural park conditions. In this paper, the individualized layout of greening landscape in agricultural parks will be planned according to tourism psychology, which can make up for the shortcomings of the original greening landscape in agricultural parks and improve the landscape level of the whole agricultural park.

1. Design principles

Combining with tourism psychology, based on the present situation of greening landscape in agricultural parks, highlighting tree species characteristics, reflecting the "landscape" landscape, building green space inside and outside, softening the surrounding environment, creating a livable and tourist environment, enriching the environmental landscape through greening planning, highlighting personalized design, and improving the city's taste. These include the following aspects:

- (1) Familiarity and humanity use the spirit of water, through greening adjustment, to provide citizens with functional and landscape appropriate use space (Hu et al. 2018).
- (2) Hierarchical use of topographic changes and arbor, shrub and grass planting to enhance the sense of hierarchy and enrich the canopy line.
- (3) Green is the main ecological factor, enriching vegetation, strengthening tree species characteristics, reflecting

seasonal changes, strengthening plant ecological construction, and giving full play to the ecological benefits of regional environment.

2. Basic conception of design

Greening the blocks to highlight the regional landscape and overall effect. The ground cover plants maintain water and soil, enriching the landscape under the forest. The zoning planting and planting table increases the flowering plants and evergreen plants and enriches the seasonal landscape. It is to create a landscape of sparse forests and dense forests, and strengthen the greening along the lake to create a garden effect of lakes and mountains (Wang et al. 2016).

3. Overall layout

According to the regional characteristics, land use nature and urban spatial form, the ecological landscape belt is designed. In the greening landscape design of agricultural garden, color concrete embossing material is used to extract the traditional palindrome pattern for pavement design. The pavement design of Road intersection shows the regional culture by embossing the traditional brick pattern of concrete footprint. According to the demand of walking, a rest node is set every 250 m beside the sidewalk in urban area. In plant design, we should abide by nature and maintain the harmony and stability of ecosystem. In this design, we try our best to maintain the original habitat of the site. Through the guidance of rivers, roads and green corridors, we can connect the green space plates which are evenly distributed in the city. Based on the design of road speed and pedestrian speed, a fan-shaped rhythm section is formed. The design highlights the differences of road greening levels. Through psychological analysis, green can make people feel more comfortable. Therefore, the combination of trees, shrubs and ground cover highlights the seasonal changes and characteristics, forming a green pattern with rich spatial levels and varying heights (Lu and Sun 2018). In the selection of tree species, local tree species and conservation tree species are the main ones. In view of the soil condition of micro-expansive soil, the current situation of Eucalyptus and other plants are retained to protect biodiversity. Street furniture design combines traditional elements and modern materials, interprets the inheritance and continuation of historical context in a simple and modern way, with a high degree of identification and at the same time coordinates with the overall style of the street. The overall layout plan is shown in Figure 1.



Figure 1 Overall layout design plan

4. Green planning and design layout and plant landscaping

The overall layout of the design is a natural layout. Based on the original greening, the evergreen trees, flowering plants, seasonally changing plants and climbing plants are appropriately added. The entrance plaza, the lake island and the peninsula are carefully treated, and the greening barrier is set. The scenic spots and scenic spots are separated by blocks of greenery, sparse or dense spaces, and flower shrubs and water-storing plants are arranged

along the lake to form natural connections and separations of water and land, increase ground cover plants and enrich landscapes. When planning the individualized layout of the green landscape of the agricultural park, the following factors need to be considered:

(1) Selection of natural factors. Natural factors are the basis of spatial distribution and evolution of land use, including elevation, slope, climate, geological conditions, land use status, etc. According to the available data, three natural factors, elevation, slope and land use status, were selected as the factors for evaluating the suitability of agricultural garden land. The topography and gradient of the area vary greatly, and the current situation of land use is relatively fragmented and complex. Selecting these three factors can reflect the physical and geographical characteristics of different functions of agricultural parks, as well as the sensitivity of regional environment.

(2) Determination of environmental factors. Agricultural parks are located in areas with complex topography, dense rainstorm climate and close to urban roads. Therefore, water ecological security and noise have a greater impact on the layout of agricultural parks. Functional zoning needs to consider the surface runoff in rainstorm weather to prevent the negative impact of rainstorm runoff on agricultural parks. Noise has a certain impact on learning and living. Before functional layout, the impact of road traffic noise on campus life should be considered.

Based on the above steps, the individualized layout of greening landscape of agricultural park based on tourism psychology is completed.

III RESULTS

In order to more accurately evaluate the suitability of different functional land use, this paper uses the analytic hierarchy process to determine the feasibility of this method, and finally finds the random consistency ratio <0.1 through the consistency test, thus calculating the weights of different indicators in different functional areas, as shown in Table 1.

Table 1 Index weights for different functional areas

Index	Index weights for different functional areas				
	Life function	Public service	Agricultural practice	Display function	Teaching function
Water ecological security	0.24	0.28	0.18	0.20	0.12
Elevation	0.10	0.13	0.15	0.16	0.17
Slope	0.17	0.18	0.20	0.21	0.22
Noise	0.29	0.17	0.12	0.13	0.30
Land use status	0.20	0.24	0.35	0.30	0.19

Since the dimensions and magnitudes of the indexes and the positive and negative orientations of the indexes are different, and in order to truly reflect the relationship between the indicators and their differences, the initial data needs to be normalized. The larger the index value is, the more favorable the land suitability is, the positive index calculation method is adopted, that is, the index attribute is positive; the smaller the index value is, the more favorable the land suitability evaluation is, the negative index calculation method is adopted, that is, the index attribute is negative:

$$\text{Positive index: } x_{ij} = \frac{x_j - x_{\min}}{x_{\max} - x_{\min}} \quad (1)$$

$$\text{Negative index: } x_{ij} = \frac{x_{\max} - x_j}{x_{\max} - x_{\min}} \quad (2)$$

In this study, the water ecological security pattern and noise are calculated using the forward index, and the elevation and slope are calculated using the negative index. According to the different development intensity of different land types, combined with the experts' opinions, the weights of land use suitability of residential areas, farmland, base ponds, woodland and water bodies are 1,0.7, 0.5, 0.2 and 0, which meets the current reasonable landscape design requirements. Based on the above-mentioned evaluation of the individualized layout scheme of the agricultural park greening landscape, the results show that the paper can be feasible.

IV DISCUSSION

Based on the research of Zheng Xie, this paper designs a personalized layout scheme for agricultural park greening landscape based on tourism psychology. From the research of Zheng Xie, the available value is selected to rationalize the greening landscape of agricultural park. In the stage of landscape design, we integrate the various types of data collected, combined with the opportunities and limitations of the site itself, integrate the design concept into the design to design a historical and cultural connotation and designed a road landscape with historical and cultural connotation, humanistic value and personality characteristics. Finally, a set of system design results were formed; the entire design was well received by the owners and the industry, and we accumulated experience in the process.

V CONCLUSION

In this study, the individualized layout system of greening landscape in agricultural parks was constructed from the aspects of function orientation, spatial layout, agricultural characteristics, traffic organization, scenic spots, service facilities and vegetation landscape. It can reasonably and accurately evaluate the quality of landscape planning of urban leisure agricultural park, and it is a simple and effective optimization method.

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