Public participatory landscape design for Beigu Hill wetland

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Abstract

Based on an on-the-spot inspection of the Beigu Hill wetland, three landscape designs of the wetland and a questionnaire about the designs were prepared. Then, the questionnaires were issued to people from every walk of life, of different age groups and different education levels for a survey. From the data obtained from the survey, it is concluded that the majority of the public think it is necessary to restore and reconstruct the wetland. Most people choose the Design in which the attractions are dotted properly, one attraction rising higher than another, amusement facilities are integrated into motionless attractions, and the hill lies side by side with the water, and which combines tourism, environmental protection and amusement. Few people choose the Design of restoring the reed wetland, which lays stress on the ecological functions. 51% of the interviewed people put the priority of the design on the natural environment, 36% of the people think the priority should be put on the water environment, only 13% think that the focus of the restoration is humanitarian environment. This indicates that the public generally agree that the Beigu Hill wetland should be constructed into an ecological landscape. Besides, in the light of the social, economical and ecological reality of Zhenjiang, this paper analyses the public’s choices of the designs. The finding of this study is a valuable reference for the redesign of the Beigu Hill wetland landscape.

Keywords: public participatory, landscape design, wetland, humanitarian environment.
1 Introduction

The concept of public participatory design (PPD), which was put forward at the end of 1980s, has exerted a revolutionary influence not only on the reconsideration of design methods, but on the designer’s attitude, thinking and values. It has been extensively adopted by many international design centers, national design organizations [1].

There are two reasons why stress should be placed on PPD. Firstly, PPD can teach the public proper skills on the design and research of landscapes. Secondly, the public can be educated and their interest can be aroused about landscape design. The utmost aim of emphasizing PPD is to improve the efficiency of the study of innovative landscape and make full use of the public ingenuity about landscape design [2].

Though they agree on the variety of ecological elements and the heterogeneity of communities, the public in the same community have different ideas about the landscape design [3]. The public participation can, therefore, improve the public’s adaptability to various changes so that they can make different designs for different purposes [4,5].

Zhenjiang Beigu Hill Wetland, a riverside wetland, lies at the foot of Beigu Hill in Zhenjiang City, which is located in the Plains of Middle-and-Lower Reaches of Yangtze River. Its dominant plants are *Phragmites communis* and *Phalaris arundinacea*. Located at 119°28'E and 32°15'N, Zhenjiang belongs to the damp monsoon east and north subtropical zone. With an annual rainfall of 800~1600mm, an annual average temperature of 15.4°C, and with 240–260 days free of frost, with an total annual temperatures of 5000–6500°C, Zhenjiang is distinct in different seasons, which is favourable to many plants.

The wetland is influenced by the water level of Yangtze River. The River’s highest water level occurs during the months May through September, and the months January through April being the dry season of the river the wetland shows its face. The months November through December are the period of river’s normal level. The scenic spot-Zhenjiang Beigu Hill is world-famous because of its great historic interests and natural landscapes. A good design of Beigu Hill wetland will add to the beauty of Beigu Hill, and PPD will facilitate the landscape design for Beigu Hill.

2 Methods for the public’s participation

2.1 Questionnairing

In order to acquire the public’s opinion about the landscape’s effect on the environment, and to realize an interaction between the landscape designers and the public, questionnaires were issued.

The questions to be answered are presented to the public in a standardized form and order, and in this way the designers can communicate with the public. The questionnaires can cover many aspects. On the one hand, from questionnaires the designers can obtain the data necessary for the research, learn
about the public’s opinion about the landscape design; on the other hand, the project and the purpose of the questionnaires are briefly introduced in the introductory passage, which tells the public the importance of what we are doing and arouses the public’s sense of participating in the landscape design.

2.2 Interviewees

Questionnaires were issued to the governmental functionaries in Zhenjiang Municipal Government, Municipal Hydropower Investment Company, Municipal Parks Bureau, Planning Bureau, tourists, inhabitants and students around Beigu Hill to obtain their suggestions and advice on the landscape design.

2.3 Time and sites for questionnaires

In order to acquire the public’s opinion about the landscape’s effect on the environment, and to realize an interaction between the landscape designers and the public questionnaires were issued.

Sites: Beigu Hill Park and the Wetland near it

2.4 What is questioned about

Based on an on-the-spot inspection, three landscape designs were made before the questionnaires were conducted.

![Figure 1: The three designs of the Beigu Hill wetland.](image)

The three designs in figure 1 put emphasis on different aspects. Design A puts emphasis on its ecological functions; Design B on its tourist function and its historic interests; and Design C emphasizes its amusement function and its historic interests.

On the questionnaire are nine multiple-choice questions, each question having 3-4 choices. The nine questions are as follows:

1. Is it necessary to make a model restoration of the Ecological Embankment-Riverside Zone-Wetland System? (a. Necessary; b. none of my business; c. unnecessary).

2. Which of the three designs is best? (a. Design A; b. Design B; c. Design C).

3. Why do you think the design is best? (a. Embodies the convergences of Yangtze River and the Great Canal; b. Embodies the natural qualities and the historic interests of Beigu Hill; c. Both of a and b).
4. Which attraction is the most effective? (a. Wetland; b. Wide expanses of water; c. River surface with humanitarian atmosphere).

5. Which of the special attractions is the most effective? (a. Culture of Three Kingdoms; b. Yangtze River Landscape; c. Hills covered with Woods within a city; d. Combination of the above three).

6. What culture should the humanitarian attractions embody? (a. Culture of the Three Kingdom; b. Culture of Wu; c. Combination of nature, history and culture; d. The culture of Yangtze River).


At the end of the questionnaire is a column for suggestions and advice.

3 Results and analysis

3.1 Statistical results

Much care was taken to select the proper returned questionnaires and the improper ones were rejected. A statistics about the results of the survey was made with the help of computer statistical software.

200 valid questionnaires were returned to us. The interviewees are representative of different age groups, different lengths of living there and different levels of education.

Table 1: Survey and statistics of public participatory landscape design for Beigu Hill wetland.

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Of the interviewees, 128 have received a college/university education, accounting for 64% of the interviewees; 52 have received an education of senior middle school or vocational school, accounting for 26%; only 20 have got an education of not higher than junior middle school. That truly reflects the level of education of Zhenjiang citizens.

There are 32 interviewees under the age of 20, accounting for 16% of the interviewees. The interviewees at the age of 20 through 49 account for 68.5% (137). The rest are 50 years old or older.

This shows that the survey is representative and convincing.

3.2 Analysis of the statistic results

It can be seen from the above table that 198 interviewees (accounting for 99% of the surveyed) think it is very necessary to restore the Eco-embank-Riverside Zone-Wetland System.

The main reason why so many people support the restoration of the system is that with the development of the economy and the rapid increase of the population people are increasingly concerning about the ecosystem and always support eco-landscape designs. As for the choice of the designs, 186 interviewees (accounting for 93%) choose Design B, which is oriented to tourism. There are two reasons for that. On the one hand, most people have realized that tourism can boost the development of economy of a city; on the other hand, the reed wetland may be covered by the river mud in the future. 170 people think there should be a the river surface near the Beigu Hill with a humanitarian atmosphere; 56 % of the interviewees think a Beigu Hill Wetland Landscape which combines Three Kingdoms Culture, Yangtze Scenes and Forests within a City should be constructed. 164 people (accounting for 82%) wish that the wetland can be reconstructed into one which combines the nature with history and culture. These indicate that the public’s desire for a humanitarian environment is greater than that for a natural environment. There are 102 people thinking that the priority should be set on the natural environment, while 72 think that the priority should be put on the water environment, each respectively accounting for 52% and 36% of the surveyed people, and there are only 26 people (accounting for 13%) who think consideration should be first put to the humanitarian environment when designing the landscape. But it doesn’t follow that the public think the natural environment is more important than the humanitarian environment, but that the public have fully realized the natural environment is essential for our survival, and the humanitarian environment is a foundation for further development. 120 people think that the quality of water in the Yangtze River is average, 78 poor, each respectively accounting for 60% and 39%.

The economy and culture of Zhenjiang being developed and the citizens having high qualities, most citizens have a great demand for spiritual life. So, 93% of the questionnaired choose the tourism-oriented Design B.

Besides, in the “Suggestion” column it is suggested that the design must lay stress on the combination of nature with historic interests. And the reason to choose Design B is that Design B combines tourism, environmental protection
and amusement, and it is innovative in that its attractions are dotted properly, one attraction rising higher than another, amusement facilities are integrated into motionless attractions, and the hill lies side be side with the water.

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References