

Low cost management and operation of park green space based on design

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Abstract. This paper expounds the purpose and significance of the research, analyzes the present situation and causes of maintenance and management of open parks in China, and puts forward the design methods and countermeasures to reduce the cost of maintenance and management of open parks in China.

1. The Purpose and Significance of the Study

In the traditional garden design, little consideration is given to the maintenance management after the completion of the maintenance work, which makes the cost of maintenance management increase. If at the beginning of the garden design the designers can fully consider park maintenance management in the future, change the design idea in the past from the design source, avoid or reduce the inconvenience of maintenance management due to design, the cost will be greatly reduced.

Therefore, whether landscape designer can do from the follow-up maintenance and management work, looking for laws of urban green space maintenance management stage, to guide our landscape design work, reduce the cost of garden green space maintenance and management, thereby increase the economic benefits of garden greenbelt, that will be of great significance to the study of our garden design methods.

2. The Development and Conservation Management of Open Parks in China

2.1. Concepts Related to Maintenance Management

At present, there is no definite definition of park conservation management. In the sense of the word, Park conservation management refers to the cultivation, conservation, management and renewal of the park to keep it in good condition and extend the service life of the park. To understand the concept of maintenance management, three points should be clarified:

First, the main purpose of park conservation management is to ensure the landscape effect of the park. Plant conservation management is the main content of urban park conservation management.

Second, efficient maintenance effect must have reasonable and efficient management measures.

Third, a construction team is needed, whose practitioners have certain knowledge and skills of landscape maintenance, can operate certain garden machinery equipment. In this way, the curing effect will have certain specifications.

2.2. The Cost

The composition of the cost in China mainly includes: expenses of raw materials, materials, fuels, etc.; depreciation expenses; wages.

The cost of conservation management mainly refers to the cost that needs to be paid to maintain the normal operation of the park, including direct cost and indirect cost. The direct cost mainly includes



labor cost, material cost, machinery cost and various consumables cost. Indirect costs are often referred to as overhead costs and other indirect costs.

The design affects most of the maintenance and management costs. Maintenance management cost should be control through the reasonable plant collocation, road design, and the design of the irrigation system, improving the machinery and even large maneuverability, thus reducing the artificial participation project, the spending such as labor, materials.

2.3. The Status Quo of China's Open Park Conservation and Management

At present, China's urban open parks are mainly invested and constructed by municipal departments and managed by relevant municipal and district government departments, which are for residents to enjoy, visit, rest and exercise.

With the development of parks, people pay more and more attention to the conservation and management of gardens. But there are few laws and regulations of open park maintenance management in China, and maintenance management is still in relatively low-level stage. Now we are at the park green space construction era slowly toward the park maintenance management transition.

2.3.1. Focus on construction and care less. The lack of investment in early maintenance and the poor foundation of maintenance will inevitably have a certain negative impact on the maintenance and management after the completion of the park and the maintenance funds will be increased in disguised form.

2.3.2. Lack of a set of whole maintenance quality standards.

2.3.3. The technology of the maintenance unit is relatively weak and the scientific and technological content is relatively low. And most of the employees do not have relevant technical certificates and training experience.

3. Design Methods and Countermeasures of Open Parks to Reduce the Maintenance and Management Cost

3.1. Garden Plant Design

Reasonable plant design can achieve a beautiful effect on the landscape. It not only can save a lot of manpower and resources in the maintenance, but also form good ecological effect in the whole city environment.

In the conservation of parks, most of the cost is spent on plants. The conservation cost of large trees and shrubs is decreasing with age. Pruning plants require a lot of labor. Although they have a good view of the landscape, they are a significant expense in actual conservation management. In addition, in the process of plant design, it is necessary to pay attention to the selection of tree species. We should adhere to local principles, attach importance to site evaluation, select perennial plants to replace biennial plants, and use carefully pruning plants. These are the key factors that restrict the maintenance cost.

3.2. Square Road Design

The paving materials, size and distribution density of the square road should reasonably reflect the flow of people and accord with people's behavior. A good design is not only easy to maintain and prolong the service time, but also increase people's pleasure, reduce the man-made damage of the green space. The poor design of the road is difficult to maintain, deteriorating rapidly, resulting in serious cost waste.

3.3. Landscape Design

Landscape design not only should pay attention to its relations with the surrounding environment, also should pay more attention to its sustainability, such as the number of years of use, the number of users, the frequency of use, the way of use. In case of large usage, we should choose thick and solid

materials and small products with strong structure as far as possible. For example, central park in the United States and Citroen Park in Paris, add a bit of cultural context as people use the depleted facilities.

3.4. Design of Maintenance Related Facilities

The quantity and position of toilet must design reasonable so as to avoid unnecessary trouble to conserve. In addition, some strip parks should be designed at the beginning of the design for all aspects of waste disposal, such as storage, transportation, etc.

3.5. Maintenance Management Procedures

The design of maintenance operation route should be pay more attention to in the design process .The location, width, straightness and design of paving materials, which are mainly used in the maintenance and management of roads, will inevitably affect the areas covered by the operation, such as the spraying of pesticides, all of which will have an impact on the maintenance cost.

4. Conclusions

In order to reduce the maintenance cost, we must start from the source, that is, design.

4.1. Trees and Shrubs are Well Matched

An open park with ecological effect has strong self-repairing ability, and a strong radiation effect, which reduces the later maintenance.

4.2. The Design of Roads and Gadgets should be Practical

We cannot only pursue beautiful in the design. We must consider the person's behavior habit adequately, pays attention to the person's feeling. Only in this way can the landscape not be destroyed by people, thus reducing the cost of maintenance and management.

4.3. Designers need to be Familiar with Maintenance Procedures

In the design, the maintenance operation should be free of obstacles, which can reduce the unnecessary maintenance labor cost.

4.4. Take Full Consideration of the Sustainability of the Park

First, the application of low-carbon energy conservation and technology should be carried out. Second, in the design process, the park must be regarded as a sustainable development project to complete. The design, construction and maintenance management of Open Park is a continuous and uninterrupted process, which is a whole. The designer should consider the whole Open Park planning and design and coordinate the subsequent stages, especially the conservation and management stages. Therefore, we should keep exploring the design methods of open parks and try to find a best design concept.

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