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DESIGNING TOMORROW'S CITY: SOLUTIONS FOR OVERCOMING URBAN LANDSCAPE CHALLENGES

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Abstract: Advancements in landscape architecture technology wield substantial influence in the realm of sustainable development. Within this domain, the fusion of ecology with landscape design and construction technology stands as a crucial area of research and development. The pursuit of novel concepts, materials, and methodologies assumes pivotal importance in propelling the evolution of contemporary landscape design. Landscape construction, in particular, assumes a central role in driving sustainable regional development. Yet, confronted with diminishing urban land resources, a comprehensive enhancement of urban landscapes through construction activities necessitates a meticulous examination of challenges within urban landscape architecture design engineering. Tailoring design schemes to the unique attributes and circumstances of each project emerges as a continuous imperative to ensure the progress of urban garden engineering.

Keywords: Landscape Architecture Technology, Sustainable Development, Ecology, Urban Land Resources, Urban Garden Engineering.

1. Introduction

In the context of sustainable development, the development of landscape architecture technology will undoubtedly be significant impact, ecology in landscape design and construction technology research and development activities are important considerations, continuous research and development of new ideas, new materials, new technology will become the focus of the current landscape design development. Landscape landscape construction plays an important role in the process of promoting regional sustainable development. But due to the decrease of urban land resources, to fundamentally improve the urban landscape in the overall benefit of landscape construction activities, we must carefully study the problems in urban landscape architecture design engineering, and according to the specific characteristics and conditions of the project, constantly adjust the actual design scheme, to ensure the development of urban garden engineering.

2. Research Background

2.1. Basic Overview of Landscape Architecture

The construction of landscape gardens in China has a long history of development. In the construction of landscape gardens in China, the main attention is paid to the construction of natural intersection and green vegetation, and the development characteristics of modern urban gardens in China can also be reflected by planting a large number of green plants. After evolution, modern landscape architecture has almost can make plants and urban architecture, but now we have higher requirements of modern landscape design, not only requires modern landscape design to fully integrated urban plant

architecture design, but also the urban historical features, local cultural characteristics, so the modern landscape design for people's feelings, comfort has a high emphasis on [1].

2.2. The Role and Importance of Landscape Architecture

Landscape architecture mainly plays an important role in the field of spiritual civilization and material civilization. A large amount of vegetation must be used in the landscape garden engineering, because this green plant can not only filter the harmful substances in the air, but also has the function of purifying the air, and has the function of dust suppression and noise reduction. In addition, due to the urban water by industrial waste water, pollution, and no suitable water environment, green vegetation in landscape engineering can be in a certain sense the effect of purifying water, lawn can effectively absorb and dissolve the surface of the dirty material, the roots can also be in deep adsorption dirty material, reduce the bacteria reproduction rate, and the effect of purifying water, soil [2].

In the landscape architecture design, the technical innovation should be strengthened to make the landscape garden beautification function and environmental effect come into play. The state has paid high attention to the protection of natural resources, environmental pollution remediation and environmental restoration.

2.3. Principles of Landscape Architecture Design

2.3.1. Take into Account the Principles of Applicability, Economy and Aesthetics

Suitability, economy and beauty are the three key elements in landscape garden engineering planning and design. Landscape architecture has comprehensive characteristics, so we should play the three elements into the garden design.

2.3.2. Principles of Coordination and Unity between Man and Nature

In the overall planning process of landscape architecture, attention should be paid to the relationship between man and nature. In the design of landscape architecture, it is necessary to integrate various disciplines, and strengthen the use of botany, ecology, sociology, aesthetics and other knowledge, so that thinking runs through it, to ensure the formation of a harmonious interpersonal relationship between man and nature, so as to fully demonstrate the diversity of biology.

2.3.3. Principles of Three Dimensional Landscape Greening

When planning the ecological landscape of modern garden city, we should actively develop the value of three-dimensional greening and pay attention to vegetation landscape. Actively create the urban three-dimensional ecological landscape form, pay attention to the analysis of the characteristics of green space, comprehensively give full play to the characteristics of points, areas and lines, and give full play to the value of the application of urban green space. Various methods can be used in architectural design, including vertical greening, three-dimensional greening, etc., in order to maintain the natural landscape hierarchy and diversification of the microclimate, air natural environment adjustment, while in the construction can be used in multiple tree species, including planting shrubs under trees, planting flowers under trees, etc.

2.3.4. Ecological Principles

Natural environment is also in the landscape overall planning and design, so one of the main purpose of landscape planning is to form human and nature, landscape and regional harmonious coexistence

between the natural environment, in the realization of personal yearning for beauty and respect the natural law of development, so as to establish the natural and ecological system of landscape architecture.

2.4. The Main Role of Garden Engineering in Urban Construction

2.4.1. Enrich the Visual Experience of Tourists

Other compared with construction engineering design project, urban landscape design project has a more outstanding flexibility and artistic quality, architectural designers flexible use of architectural form and layout, to highlight the sense of stereo and administrative levels of nature, fundamentally increased the artistic attraction of urban landscape architecture, provides visitors with more rich aesthetic feeling.

2.4.2. Enhance the Environmental Functionality of Urban Landscape Architecture

The construction of urban landscape architecture should perform a variety of functions to create the main places for the masses to rest and rest. Therefore, in the urban landscape garden space, the emphasis on the use of spatial aesthetics can enhance the overall functionality of the urban landscape, so that visitors here can deeply experience the aesthetic atmosphere of the surrounding environment.

2.5. Actual Status Quo of Landscape Architecture Design

In the current design of garden landscape and plant selection scheme, due to the lack of scientific and reasonable landscape and green space system design system of horticultural landscape engineering project designers, it often leads to the serious inconsistency between the landscaping project and the requirements of realistic engineering design. For example, in a landscape garden construction project, the actual engineering designers do not completely choose the scheme design according to the growth and reproduction rules of plants, which leads to the decline of the survival rate of plants, which seriously affects the comprehensive economic benefits of landscape design. Or due to the introduction of excessive large vegetation, resulting in the increase of the difficulty of the plant maintenance work, serious loss of construction cost [3]. At the same time, in the actual engineering design of garden engineering, some engineering designers blindly emphasize the overall level and consistency of garden engineering, resulting in a large number of plants of the same kind in the process of plant selection, which leads to the plant layout and vertical design in the plane. At the same time, too unified landscape plants may also increase the risk of pests and diseases.

Although Chinese landscape architecture has a long cultural tradition, it is still very different from some countries. At the same time, due to the insufficient creativity of landscape architecture design in the early stage of the founding of new China, it often only borrowed the practice of traditional garden. However, in recent years, many Chinese architectural designers have blindly imitated this European architectural design model, so that there are more kinds of European style landscape in China. However, the actual situation in China is not suitable for the construction of a large number of European architecture, which is also important to the regional differences in China. However, many landscape architecture planning and design are only for reference, and are not thoroughly analyzed by the specific topographic characteristics of the area where the building is located, which makes a great style difference in landscape architecture planning [4].

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3. Key Points of Urban Landscape Architecture Design

3.1. Give Full Play to the Advantages of Natural Resources

In the construction of landscape architecture, the development of natural advantages helps to fundamentally enhance the cultural ornamental value of landscape and improve the landscape quality of space. At present, when selecting the design reference, they mostly take the requirements of the natural environment first, and design special spatial landscape nodes [5] by adjusting the landscape characteristics. In addition, through the use of local vegetation and plants, the survival rate of vegetation can be fundamentally improved, so that the designed urban landscape architecture can directly show the characteristics of the local natural landscape, so as to improve the space use efficiency of urban landscape architecture design.

3.2. Actively Choose Green Materials

In order to ensure that ecological technology can achieve good results in the practice of landscape architecture construction, the new landscaping technology should be widely adopted, the promotion of green projects should be actively carried out, and effectively increase the utilization rate of landscaping. Environmental protection energy resources mainly include geothermal energy, sunlight, temperature difference energy, etc. The economic utilization value of this energy can effectively replace coal resources and other non-renewable resources, fundamentally protect the surrounding natural environment, and then get more high-quality environmental protection resources [6].

3.3. Rigorous in Plant Configuration

In the space art design of urban landscape architecture, plants are also one of the most important factors. With the acceleration of China's construction pace, the public's demand for the natural environment is increasing. While making people healthy, the visual aesthetic function should be improved. By using the color and shape changes of various vegetation in the seasons, the comprehensive appreciation and hierarchy sense of the park should be improved, and the natural environment of the scenic spot should be fundamentally improved.

3.4. Improve the Garden Construction Planning

In the overall ecological planning and design stage of landscape architecture, it is necessary to further optimize the design scheme of landscape route to ensure that the permeability of rainwater needs to be increased in the route design, and the rainwater can be reasonably stored and used underground, so as to really improve the water use efficiency. At the same time, in the construction scheme, it is necessary to improve the coverage of the pavement structure with good drainage performance, the runoff [6] of road surface can be effectively reduced.

Second, if in the design and construction stage, all the facilities and equipment in the landscape have no overall planning and coordination, such as sketch facilities without complete design, it is difficult to reflect the overall efficacy, at the same time is also likely to affect the overall effect of the whole landscape formation [7]. So for the improvement of sketch facilities quality, is required to do two aspects to improve: ① should pay attention to add sketch facilities in the design stage of uniqueness, innovative, can combine the historical background of landscape engineering location, local customs or regional culture, etc., makes the local elements can be fully reflected [8].② Construction of the sketch

facilities as one of the important components of the urban landscape landscape, so in the specific design planning, to make the construction of the sketch in the implementation of the overall effect of the city landscape natural scenery, to maintain their own differences [9].

4. Analysis of Urban Garden Design and Construction

4.1. Design for the Urban Ecological Environment

In order to adapt to the long-term development needs of urban ecological environment, starting from the basic environmental requirements of water and soil quality, the natural conditions around the city and its possible influencing factors should be fully considered in the setting project of urban environmental landscape and garden landscape, so as to ensure that the quality of urban soil meets the needs of landscape development.

4.2. Selection of Ecological Landscape Garden Seedlings

Before the engineering construction, the construction unit must check the site in advance, with the possibility of hindering building planning, and on the premise of protecting the original trees handle the green area, then according to the design drawings planning green space, again by professionals for building surrounding geological environment factors for secondary scientific layout.

The planting of seedlings in garden design is a very important part. In order to improve the availability of seedling planting and ensure the smooth survival in the later stage, we should pay attention to the basic principles of adjusting measures to local conditions in the selection of seedlings, so that the selected seedlings can better survive in the site. In addition, the selection of seedlings should pay attention to the conditions of the seedlings themselves, can focus on the growth and development of seedlings, as far as possible to choose more mature root seedlings for cultivation and transplanting [10]

4.3. Strengthen the Overall Construction Quality Management Work

Ecological garden engineering is a more complex and time-consuming system engineering, the comprehensive technology and operation ability is very important for the project smoothly, in the ecological garden scenic area, improve drainage, is to avoid heavy rain and bad climate damage to the natural landscape is one of the key preventive measures, but also keep the soil moisture and support the important basis of vegetation development. In view of the landscape soil, saplings planting years, climate, etc. to design different watering methods, familiar with the current drainage methods, to prevent excessive watering [10].

From the function of the soft landscape and the hard landscape of garden engineering, engineering management can also cause a very good role in the overall management, and can not reflect any neglect. Therefore, the construction management should also greatly enhance the [11] from its own comprehensive function. First of all, the supervision and management need to maintain the effective implementation of encouragement and punishment measures, improve the construction supervision ability, and any situation should be effectively solved. Secondly, the supervision and management of soft landscape and hard landscape in the garden must be carried out in a refined way, detailed records of daily situations, and timely treatment of the special situations that may be in view, so that in the future development of the project, we can continue to achieve good results.

5. Future Development Trend of Landscape Architecture Design

5.1. Adhere to the Principle of Combining Biodiversity, Scientific Nature and Artistry

In the landscape garden design, we should pay full attention to its ecological value, strengthen the attention to the ecological diversity, combine the scientific science and artistic application, and fully consider the ecology and nature, and do a good job in the allocation of garden plants. At the same time, the reasonable introduction of other trees, through scientific selection, plant matching, in order to increase the moderation of landscape gardens. In flower cultivation, we should control the season to avoid affecting the survival rate of plants and greening benefit

5.2. Consider the Balance between Economy, Ecology and Society

First, in the construction of landscape garden engineering, we should pay attention to the implementation of the design policy of "small, small and medium", and improve the greening level through reasonable green space design. Trees planted at the same time must choose the tree species suitable for the local environment. Second, the staff should not only improve the attention of the whole nature, but also must pay attention to the nature in the construction, as far as possible to reduce pavilions, rockery pools and other cultural landscape, with biodiversity means to develop natural gardens, so as to improve the biological diversity. Third, adhere to the people-oriented thought, coordinate the development of human and nature, correctly handle the relationship between ecological benefits, social benefits and economic benefits, with a long-term view of the development of garden design [13].

5.3. Strengthen Improvement and Innovation

With the increasing improvement of people's living conditions, the artistic requirements will also be enhanced, and there will be more detailed requirements for the design of landscape architecture. First of all, the staff should pay full attention to the modern personalized aesthetic needs, in order to promote the garden engineering toward a more personalized, refined direction of continuous improvement. Secondly, because landscape architecture engineering is a key complex project in the complex system of modern cities in China, it will encounter many problems in the future construction. Therefore, it requires workers to strengthen improvement and technological innovation, and adopt more cutting-edge technologies to accelerate the development of landscape architecture.

5.4. Attach Importance to Sustainable Development

Before the planning and construction of gardens, the staff must all grasp the local actual situation, from the construction of landscape engineering, and comprehensive for artificial water consumption, cost, the utilization of natural resources, combined with the construction of garden and local vegetation, implement the principle of sustainable development, to enhance the integrity of the natural and the ecological environment system and diversity, to promote landscape engineering towards modernization.

5.5. Integrate into Ecological Principles

Ecology concept into the landscape design, to consider is the natural environment and soil nutrient balance, and how to cooperate to the ecological garden and the local natural environment, and how to ensure the sustainable development of garden, so the staff in the choice of green plants green plant

varieties, production, etc., should also try to avoid using low survival rate of green plants, don't blindly introduce foreign organisms, in order to avoid damage to the local ecological balance.

6. Conclusions

To sum up, in order to fundamentally improve the environmental and ecological benefits of urban landscape architecture, and improve the landscape economic benefits of urban landscape architecture, it is necessary to carefully analyze the various problems existing in urban landscape architecture, and gradually complete the design scheme according to the specific construction requirements and characteristics of urban landscape architecture engineering. Nowadays, engineering and technical personnel should not only fully consider the beautiful environment of urban landscape architecture and ecological characteristics, but also fully consider its cultural characteristics, and as a whole for human emotion, natural environment, the influence of building materials usage, in order to really improve the overall design effect of urban landscape architecture project. Summary, due to the soft landscape and hard landscape, the overall social impact, so the project in the stage, we should pay attention to all aspects of social influence and timely adopt reasonable and effective way to solve, thus to maximize the landscape design formed a good social significance and environmental benefit [14]. Thus improving the reliability and feasibility of the construction project.

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