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# Urban landscape architecture design under the view of sustainable development

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**Abstract.** The concept of sustainable development in modern city landscape design advocates landscape architecture, which is the main development direction in the field of landscape design. They are also effective measures to promote the sustainable development of city garden. Based on this, combined with the connotation of sustainable development and sustainable design, this paper analyzes and discusses the design of urban landscape under the concept of sustainable development.

## 1. Introduction

Since the industrial revolution began, the technology target occupies the human mind in the most sacred position. So in reality people's thought, the so-called development is nothing more than the progress of science and technology and the rapid growth of social value. Due to the long-term neglect of the natural resources carrying capacity of the ecosystem, without considering the coordinated development of culture, economy, environment and nature, human beings have entered the ecological crisis[1]. We rely on the survival of the earth, and not too many resources can be disorderly exploitation and unlimited use.

The concept of sustainable development thought is to consider the issue of the development of human society, economic value, natural protection, resource utilization, ecological environment construction and sustainable development from a global perspective, emphasizes the coordination of economic value and ecological environment, the pursuit of the symbiotic harmony between man and nature, its core idea is the rapid and effective economic the development of decision basis of justice consciousness and people should be established in natural environment sustainable ability, actively participate in the society.

Chinese gardens have a long history, and the art of gardening is extensive and profound, and enjoys a high reputation all over the world. The composition of natural, flexible layout, cleverly borrowing and local creation of classical gardens Chinese, still play an extremely important role in modern landscape design[2]. As modern landscape designers, we should not only learn the characteristics of traditional and classical garden charm, but also make full use of modern new materials and new technology, to create a beautiful environment space for people to watch, recreation, entertainment, in the modern city of reinforced concrete forest, searching for the joy of returning to the nature.

The landscape of different size, content simplified, but contains four basic elements: land, water, plants and buildings. Therefore, the construction of mountains, water, plant configuration, building construction will become the four main means of gardening. Compared with the mountain garden, water, plants, less constrained by natural conditions, the most artificial ingredients, it is also the most



flexible means of gardening, the most active means[3]. This paper discusses several problems of landscape architecture design.

## **2. Characteristics and functions of landscape architecture**

Chinese landscape architecture colorful, wonderful and unique, often break up the whole into parts into the natural. In the garden landscape, the building has both the useful function and the environment. It plays an important role in the creation of the landscape, and can be embodied in the landscape: (1) Ornament the scenery, (2) Viewing the scenery, (3) Enclosing and dividing the garden space (4) Organizing the tour route.

## **3. Classification of Landscape Architecture**

According to the different roles of landscape architecture in creating landscape, it can be roughly divided into the following four categories: (1) Landscape architecture. Most of the landscape architectures are such that usually has a certain function. Such as seventy-two sceneries in Mountain Resort, is combination of different layout, function, in the face of terrain features. The space symmetry and freedom makes the whole garden various scenery features, the overall layout of unity and variety. In addition, the creativity of landscape architecture lies in how to make use of and transform the environment conditions, such as green, water, rock, landform, climate and so on. The overall space layout to architectural detail processing, careful deliberation, can achieve, such as Pavilion, gallery, hall, etc. (2) Garden construction. Any building that can be made into an independent or relatively independent garden as a courtyard space is such. Such as empty Gallery, partition, scenery frame, etc. (3) Architectural sketch. Such buildings include outdoor furnishings, furniture, or small ornaments, such as sculpture, fountain, pond, flower bed, sign and so on. (4) Traffic building. All in the tour route on the road, stairs, bridges, docks, dock, stepping and so on are such.

## **4. Landscape architecture design methods and techniques**

The landscape architecture is different from other type of construction; it should not only satisfy certain functional requirements, and requirements of artistic, ornamental strong[4]. Not only to meet the needs of tourists in the scenic, but also pay attention to use of the outdoor space and the room inside and outside space of harmony and unity. The landscape architecture design is more flexible, can be said to composition without case which has its strong character symbol characteristics. Resulting in the design methods and skills with other types of construction will be quite different. To sum up, it mainly includes the following areas.

### *4.1. Conception*

The meaning of conception, a person skills, conception and skills can complement each other. Ideas and skills are good, superior work, and the idea of dull, skills and good, but also can be attributed to multiply. Conception of the success or failure of the whole design is critical. A good design should not only have the conception, but also be good at seize the main contradiction in the design. Not only can solve the problem of building function, but also has high artistic level, emotion in the scene, moved by sight. Ancient Chinese classical garden pavilion countless, but it is difficult to find the same pattern and style. They are always selected in accordance with the architectural style, clever configuration of rocks, plants and other features, to form a unique space[5]. Modern landscape architecture can not simply be copied. Some of the top window to the model of a wall can be abused. This is absolutely not desirable. The true art of innovation, any simple imitation will weaken its appeal.

Landscape architecture emphasizes the effect of landscape, highlighting the creation of artistic conception, but we must not neglect the architectural function and natural environment conditions. Otherwise it will be a landscape or artistic conception, source of water, in the design will not write. Such as the Mountain Resort in seventy-two sceneries, the scenery is a combination of different layout, function, in the face of terrain features. The space symmetry and freedom varied, makes the whole garden various scenery features, the overall layout of unity and variety. In addition, landscape

architecture is the creative designers how to use and transform the environment conditions, such as green, water, rocks, terrain and climate, from the overall layout to the construction details carefully, in order to achieve scenery to random, and because of the environment, proud with the form of state.

#### *4.2. Site selection*

Landscape architecture creates a harmony and nature environment, and has some typical landscape space shaping effect. Therefore, landscape architecture, such as improper location, is not conducive to the creation of artistic conception, but will weaken the effect of the entire landscape. Generally speaking, the garden is divided into three types: natural garden, regular garden and mixed garden[6]. The symmetry rules garden layout, general construction in plain and slope, Garden Road, square, flower beds, etc. According to the pool geometry layout, the trees are arranged in neat rows, prune, rigorous style, elegant style. The modern city square, garden, small parks etc. usually choose this way.

The natural and wild gardens emphasize the natural changes caused by the layout cannot do without rocks, ponds, trees and other natural scenery, so the site is the mountains, lakes, plains three have. Near the mountains of the building by the terrain patchwork, and borrow the mountains as a foil, quite natural style. In the lake marsh garden, waterfront building with wave reflection, open vision, the picture level will make people feel rich and colorful and dynamic. Mixed garden is the natural, the rules of the two according to the appropriate combination of the scene. The advantages and disadvantages highlight the party in the use of modern gardens more widely. In addition, the garden construction site in environmental conditions should pay attention to large areas, but also pay attention to subtle factors. Be good at exploring interesting natural scenery, such as a tree, a stone spring, streams, and monuments of legend, gardening is very useful.

#### *4.3. Layout*

Landscape architecture with good landscape conception and proper location, there must also be a good building layout. Otherwise the composition is not fragmented, but can not become the masterpiece. There are several types of space combination of garden architecture. (1) The combination of independent buildings and the environment to form an open space. Point of view of the building is the main body of the space, so the structure of the building itself, the higher requirements. So it is more attractive in the context of natural scenery. (2) The openness of the building group space. This group of buildings is generally large in scale, and a variety of separation and interpenetration can be formed between the garden space and the garden space. The layout of the use of decentralized, and the use of bridges, corridors, roads, paving, and so make the building connected to each other, but not enclosed courtyard. (3) Courtyard space enclosed by buildings. This combination of space, there are a large number of rooms can be used to meet the needs of a variety of functions. In the layout can be a single courtyard, but also by the size of a few yards from each other set off, interspersed, infiltration of the formation of a unified space. From the view of landscape, the courtyard space has the tendency of cohesion. The general situation is not to highlight a building, but with the help of buildings and landscape flowers and trees to highlight the artistic conception of the entire courtyard space.

#### *4.4. Scale and proportion scale in landscape*

Scale and proportion scale in landscape architecture refers to the comparison of each part of the building space with the natural object. It is not to be neglected in the design. Functional, aesthetic and environmental characteristics are the basis for determining the scale of construction, the appropriate scale should be consistent with the requirements of function and aesthetics, and coordinate with the environment. Landscape architecture is leisure, recreation, sightseeing place, the landscape content of space environment.

The general should have a lively, interesting and makes people have endless aftertaste artistic atmosphere, so the scale must be cordial and pleasant. The garden building scale in addition to the scrutiny of the building itself the size of each part and mutual relations, but also consider the influence of other factors in space environment such as stones, ponds, trees and so on. Generally through the

appropriate reduction of the size of the components to achieve an ideal kind of scale the size of the outdoor space should be properly handled, should not be too open or closed. In addition, in order to make buildings and natural scenery scale coordination, can also put some elements of buildings such as pillar, roof, walking and stepping and embankment. Direct natural stone and trees to replace or decorated with imitation of natural spray paint, imitation bark concrete and so on, the architecture and natural scenery set off each other, thus get the outdoor space pleasant scale.

#### *4.5. Color and texture*

The color and texture of the building properly handled, garden space can have a strong artistic appeal. Form, sound, color and aroma are the important factors in the artistic conception of landscape architecture, and the main features of landscape architecture style are more and more important in shape and color. Chinese southern architectural style light body, elegant color, and the north is a rich style, gorgeous color. With the use of new materials and new technology of modern architecture, architectural style is more colorful, concise and expressive. The color has the warm and cold, the shade and so on, the color sentiment, the association and its symbolic function may give the human different feeling. Texture is expressed in two aspects of the texture and texture of the scene.

There are right and wrong, the width and depth of texture, thickness, hardness, implicit and explicit difference. Color and texture is the dual attributes of building materials on the performance of the two complement and coexist, as long as good at finding the characteristic material in color, texture, and use it to organize rhythm, rhythm, balance, contrast, levels of various composition changes, you can get a good artistic effect.

### **5. Project record: Stone Battery Park main entrance design**

Stone fort is divided into two layers, each with nearly 1m specifications of the stone building outside the walls, formed in the middle of a deep around the gun lane, a foreign bunker shot. The upper fort has also set up 14 higher than 1m. As shown in Fig.1, the ventilation tube, outside the fort surrounded by 20m wide above the big trench, the more obvious its deterrent is. In order to better protect cultural relics. To reproduce the relic, the government decided to further expand around the stone fort for stone fort park. As the gateway of the park, the design of the main entrance has become the key link of the whole park construction.



**Figure 1.** A ventilation tube on the ancient fort

The park is close to the traffic complex urban trunk roads, and the space in front of the garden is narrow and the environment is poor. In order to improve the entrance environment, increase the flow of people gathering space, the design of the arc turning walls linked to the door, two points back into the park red line of 20m, set up the two sides of the ticket room. Distributed outside the square is about 50m long, with two symmetrically arranged granite seat, two lying on the historical left, as shown in Fig.2. Inside the door and then open a small square, line width of 6m, a standing height of 1.6m numbers, play a role to avoid the door on the wall, the park opposite the fort landscape at a glance.



**Figure 2.** Main entrance plaza

The whole building volume properly and not abrupt, simple and generous and not to lose the new and old gray fort echoed in harmony. The same design walls also extend its meaning with collar. The wall column is a scaled down Pavilion, which is simplified in detail. The lower part of the wall is a rough cut granite stone, and the upper part of the wall is divided into a grid and a grid. The entire wall exquisite transparent, make the garden trees flowers every constantly, unlimited wonderful views. As a result, the design of the main entrance is distinctive, with harmony and architectural style fully reflects the local and traditional characteristics.

## 6. Conclusion

The sustainable development of ecological design has a certain independence and integrity. Ecological design is not just a slogan, but also put into action, it is necessary to consider the current needs of people's life. At the same time, people also need to consider the potential future needs. This is the designer predictable design now, think about the future, and the use of ecological design methods, so that objects can be decomposed easily, into the environment, to avoid or reduce the damage to the natural environment design.

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