Analysis on the Measures of Integrating Ecological Concept into Landscape Design and Construction Based on Big Data

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Abstract. Big data is both a method and a new form of business. It can be collected the records of all life activities, an inanimate activities generated data, and through technical means, calculation, statistics, analysis, storage, transmission and is utilized to extract valuable information of the whole activity process and adopted to the technology as a whole, including the universe itself and activities, life itself, living environment and all the living and nonliving activities generated by recording the data generated. Under such conditions, landscape design and construction can make use of the powerful functions and advantages of big data and get better development. Similarly, as a popular concept in line with the values of environmental protection and ecology can also be integrated with it, providing new inspiration for landscape design.

Keywords: Big Data, Ecological Concept, Landscape, Design and Construction; Measures

1. Introduction
From the Stone Age, the Iron Age to the Machine Age, the transformation of the nature by human beings is more and more in-depth; From "reverence for heaven and earth" to "man can conquer nature", nature has gradually become a tool in the eyes of human beings instead of a god. The industrial civilization of three hundred years is the civilization of human conquering nature [1-2]. The social productive forces are advanced, and human beings have unprecedented demands on nature. However, people gradually forget that nature is not a dead thing, and the life of nature is closely linked with the life of human society. The backlash from a series of natural disasters has been accompanied by a growing realisation that the planet can no longer afford an unending industrial grab. People began to reflect on the relationship between man and nature, how to achieve a balanced and ideal state? The concept of harmonious co-existence and green development has been gradually promoted and deepened, and the concept of "ecological civilization" has emerged at the historic moment. If industrial civilization is "black civilization", then ecological civilization is "green civilization". Therefore, for landscape design, ecological concept is the mainstream of the current design, integrating it into the design and construction is the unremitting pursuit of landscape designers.
2. The influence of big data era on landscape design and construction
As far as the current development is concerned, the development mode and technical means of big data are still developing in China. If people want to keep up with the development of the times, To create more excellent living environment and development space for human society must develop at the same time as the era of big data. "Big data" was originally proposed by McKinsey, which believes that "data is the inevitable factor in the development of various industries in today's era, people in the production and life of various means to complete the use of various data, this is not only the development of the times, but also the overall trend of the future."

It can be seen that big data has dabbled in many fields, such as biology, ecology, finance and so on, and has become more and more prominent in the development of the internet age. This study mainly focuses on the design and construction of landscape, belongs to one of ecology. Big data can collect and organize data for its actual development and design. It can also be said that in the continuous development of the world, any industry and field should conform to the needs of the times to a large extent, develop in an all-round way, and gradually form the corresponding scale and characteristics with more development advantages in the continuous development.

3. The meaning of garden construction and ecological concept
Garden construction is the foundation of garden construction, which includes regional planning, address selection, community design and so on. The purpose of garden construction is to achieve beauty and ecological harmony and unity. This requires reasonable planning of vegetation and buildings in the process of garden construction. Ecological concept is people's conceptual cognition in order to realize the harmonious development of society and nature, from using nature to paying attention to nature and protecting nature. The harmonious development of the relationship between man and nature

Ecological garden is the inheritance and development based on the experience of traditional garden, following the principle of ecology, it is a kind of multi-level, multi-structure and multi-function plant community which contains science, and follows the principle of ecology to establish a new order in which human beings and animals and plants are connected. With the development of social economy, the number of urban population is growing rapidly, with various kinds of pollution, energy shortage, shortage of water resources and backward infrastructure in cities, and the contradictions such as urban population expansion, traffic congestion, housing shortage, land shortage and scenic tourism resources damaged by pollution in cities are becoming more and more serious. To effectively solve the contradiction between the economic development of these cities and the ecological environment is to establish an ecological city with organic combination of various environmental elements and sustainable development, so as to coordinate and develop harmoniously between man and nature.

4. The significance of integrating ecological concept into landscape design based on big data
Ecological concept plays a very important role in the modern development of our country. It can be manifested in two aspects: first, it can promote the benign development of the whole society to a large extent. Ecological landscape has the characteristics of sightseeing. In practical application, rich economic and social benefits can be obtained. In addition, in China's traditional culture, nature is one of the most historical development of culture, viewers can enjoy the gift of natural beauty and can effectively understand the aesthetic sense of ecological culture, promote the economic and spiritual development of society in an all-round way. Moreover, under the background of big data era, the following design of ecological garden can show the function of environmental protection more comprehensively, and treat irrigation engineering, sewer planning and shelterbelt more carefully so that it can construct ecological garden landscape which is more in line with the harmonious development of ecological environment.
5. Problems of urban garden construction

In the design of ecological garden, the choice of plants must be placed in the first place. The absorption degree of carbon dioxide and the ability of carbon sink are different, so it is an important work of ecological garden design to select plants reasonably and form a stable natural plant community structure. For example, acacia, eucalyptus, wood lotus and other plants have a strong convergence of carbon in the environment, while the slow-growing broad-leaved forest and coniferous forest have a weak ability to pool carbon. Reduce the garden ecological environmental protection function as shown in figure 1 below.

![Diagram showing ecological performance issues](https://via.placeholder.com/150)

**Figure 1.** Neglect of ecological performance.

6. Measures to integrate ecological concept into landscape design and construction

The combination of ecological concept and garden design and construction is not accomplished overnight, but a long-term process, including vegetation planting and building site selection. Only by combining the elements of garden reasonably can we realize the real integration of ecological concept and garden construction. Below we study the method of integrating ecological concept into garden design, as shown in Table 1:
Table 1. Overview of measures to integrate ecological concepts into landscape design and construction.

| Investigation of the environment around the landscape |
|------------------------------------------------------|
| Selection of garden vegetation in combination with the actual situation in the region |
| Pay attention to the excavation of potential value of garden |
| Suitable and diversified vegetation selection |
| Application of native plants |
| Adoption of eco-friendly materials and technologies |
| Ecological construction |

6.1. Investigation of the environment around the landscape
Landscape is not a single building. Before designing the garden, we should investigate the surrounding environment of the garden landscape. Only in this way can we design the garden architecture that echoes the surrounding environment. At the same time, we should investigate the characteristics of local location area.

6.2. Selection of garden vegetation in combination with the actual situation in the region
First of all, to form plants in consciousness is an important part of garden construction, the choice of vegetation plays an important role in the effect of landscape, therefore, the integration of ecological concept must work on vegetation. Vegetation not only has the function of beautification, but also has obvious effect on purifying air, static noise and dust removal. In the process of landscape construction, the coordinated development of vegetation and landscape must be satisfied. In the selection of vegetation, the beautification of vegetation and the practicability of vegetation should be considered. In the process of roof garden design and construction, in addition to ornamental horticulture, there are also some novel greening methods in roof garden design. Roof garden is one of the leaders, which is a model of general education, experience participation and community communication. The school can set up interest experience classroom around roof garden, enrich the teaching content of the school, and expand the students' cognition in many aspects.

6.3 Pay attention to the excavation of potential value of garden
The design concept of garden can not be "uniform" ecological concept not only needs to be integrated into the personal feelings of designers, but also pays attention to the coordinated development of landscape and nature. At the same time, we should increase the charm of urban culture and enhance the cultural taste of each urban landscape. Landscape architecture includes garden culture, landscape culture and so on. Realize the combination of buildings and urban culture, highlight the humanistic concept of landscape, realize the potential value of landscape.

6.4 Suitable and diversified vegetation selection
The most important factor in the ecological concept is the planting of vegetation. The selection of vegetation should be considered comprehensively according to the climate, water source and other
factors in the garden construction area, and the most scientific choice should be made according to the local economic development.

6.5 Application of native plants
In the process of integrating ecological concept into landscape design and construction, we should use local food as much as possible, and continuously reduce the demand for exotic species by applying native plants. To a certain extent, it can effectively save manpower, material resources, cost and resources. In addition, another advantage of landscape application of native plants is that they can maximize the integration of native plants and the environment, so as to better achieve the effect of ecological protection. At present, a large city in our country will be applied to native plants in the process of landscape design and construction, so as to build ecological technology and reduce the cost of plants. At the same time, the ecological concept can be better integrated into the landscape design and construction process. In addition, when choosing native plants, we can also choose some plants with strong vitality and good ecological benefits, which can enhance its practicability to a certain extent, thus effectively improving the effect of landscape [3].

6.6. Adoption of eco-friendly materials and technologies
The purpose of landscape construction is to create a beautiful environment, bring people visual enjoyment, and promote the sustainable development of ecology. Therefore, in the process of landscape design and construction, ecological environmental protection materials and technologies should be adopted as far as possible. In the design of landscape, some high-quality ecological environmental protection materials can be selected, while in the construction process, some advanced ecological environmental protection processing technology can be introduced, such as the application of artificial stone. As we all know, the material of artificial stone is mainly waste stone when mining, which is essentially a way to reuse waste. At the same time, because artificial stone does not need high temperature polymerization, it will not consume fuel. Thus, there is no problem of exhaust gas emission. Therefore, in the process of landscape design, we need to minimize the use of these artificial stones, because from the source of artificial stones, it is also a damage to the environment. Therefore, it is necessary to design more green plant landscape and use some ecological materials as hard landscape [4].

6.7. Ecological construction
Integrating ecological concept into landscape design and construction, what corresponds to it is to achieve ecological construction, practice the concept of "low carbon environmental protection ", and constantly enhance ecological benefits. So that landscape design and construction can meet the requirements of ecological environmental protection. At the same time, in the process of landscape construction, it is necessary to improve the technical level and professional quality of the relevant construction personnel, especially in the process of ecological construction, to avoid the pollution of the construction operation to the surrounding ecological view to the maximum extent, including some air pollution, water pollution and so on. For example, during the construction of landscape, some engineering waste will inevitably be produced, and the local landfill will often be chosen. Although this treatment is relatively simple and convenient, it will also cause serious ecological pollution. Therefore, in the process of ecological construction, it is necessary to continuously improve the environmental protection consciousness of the constructors and reduce the generation of engineering waste as far as possible; at the same time, it is necessary to establish a sound supervision and management system to standardize the construction behavior [5-7].

7. Conclusion
From the above analysis, it is particularly valuable to integrate the ecological concept into the process of landscape design and construction. It complies with the current trend of environmental protection and gives new inspiration and ideas to landscape design. It also tells us that both designers and
constructors should implement the ecological concept in the process of work, so that such integration can have practical effect and value.

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