

Ecological Aesthetics in Olmsted's Landscape Art

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ABSTRACT

As the most famous planner, landscape architect and founder of landscape architecture in the second half of the 19th century in the United States, Olmsted advocated adapting measures to local conditions and natural landscape rules, and the ecology proposed by biologists. The concept overlap not only regards man and the environment as an interrelated whole, but also creates an ecological aesthetics of man and environment, environment and society. This paper traces the theoretical origin of Olmsted landscape design and the reasons for the formation of its design principles, uses VOSviewer software to conduct keyword analysis on CNKI database samples, and studies typical design cases.

Keywords: *Olmsted, Ecological Aesthetics, Landscape Architecture, Central Park*

1. INTRODUCTION

Since the industrial revolution in the 1860s, the technological revolution has turned manual labor into power machine production. Productivity has been rapidly improved, and more and more people have flocked to cities. However, excessive development has destroyed the natural ecology. The increasingly prominent urban contradictions and ecological problems have gradually attracted the attention of the academic circles. In 1866, the German biologist Ernst Haeckel first proposed the concept of ecology, pointing out that about biological organisms and their external world. The science of the interconnectedness of living conditions in the broadest sense opens up the deep interconnectedness between living things and their environment. During the same period, Frederick Olmsted, who was appointed as the main director of the Central Park project in New York, put the thinking of the relationship between man and nature and the ecological thinking in the design and construction process for 18 years after 1857. The emphasis on the environment penetrates into the landscape planning concept.[1] The research shows that the ecological aesthetics point of view reflected in Olmsted's landscape art has attracted more attention of scholars and has an important influence on the development of landscape architecture and landscape design. It can provide ideas for the development of harmonious and symbiotic modern urban design.

2. THEORETICAL TRACEABILITY

Olmsted's landscape design philosophy is inseparable from his early life-learning experiences. Born in Connecticut, USA in 1822, he followed his family to and from northern New England to upstate New York on holidays since childhood. Influenced by his father, he planted the seeds of his love for landscape architecture since childhood. As an adult, he and two friends spent 6 months hiking in Europe and the British Isles. In addition to viewing the rural landscape, he also visited a large number of parks and private estates. After the trip, he created and published his first book, *Walks and Talks of all American Farmer in England*.

His unique travel experience caused Olmsted's landscape design concept to be influenced by the British pastoral and rural landscapes. The quality emphasizes the refinement and sublimation of the idyllic park design mode and the beautiful and picturesque natural expression technique. The integration of countryside, pastoral and nature into urban design not only broke people's cognition of urban park construction at that time, but also open up the idea of solving urban problems in the countryside, and introduces natural beauty into the city in the form of parks.[2]

Creatively put forward the principles of landscape design: firstly, we should focus on protecting natural landscapes, adapt measures to local conditions, respect the status quo, restore and emphasize natural landscapes; secondly, we should avoid regular design and follow natural rules; thirdly, we should pay attention to

maintaining the central area of the park and the lawns or grasslands of the park should be planted on the border with local trees and shrubs; finally, the planning of the park roads should be smooth curved lines, all roads should be formed into a circulation system, and the main roads should be used to divide different areas in the park.

In Olmsted's landscape design principles, it is not difficult to see that "protecting natural landscapes", "adapting measures to local conditions", "landscape restoration", "natural rules", "native plant cultivation" and many other concepts have always been applied to his In the landscape design works, the love for the natural landscape and the emphasis on the ecological environment are expressed. In the reading of landscape art, influenced by the writings of British authors such as Yuvidal Price, Humphrey Repton, William Gilpin, William Schenstone and John Ruskin, the emphasis on community , culture, education and other public organizations. And he firmly believes that art will transform the original barbaric state of American society into a civilized and friendly social state through a beautiful intervention, laying a foundation for the concept of design creation in the future.

3. ANALYSIS OF RESEARCH STATUS

At present, the landscape design research on Olmsted mainly starts from Olmsted himself and landscape

architecture, analyzes the design concept and development context of Olmsted landscape architecture from the perspective of history, combined with New York Central Park, Boston Greenway Park, and the U.S. Capitol Square will conduct a comprehensive analysis of their background, current situation and social functions, and summarize Olmsted's landscape architecture concepts and principles, Its influence on later landscape architecture and landscape design. However, the ecological aesthetics in his designs are only briefly mentioned, and they are not systematically sorted out. According to the time node of the development of landscape architecture and ecology, Olmsted's ecological aesthetics has a crucial influence on the ecological orientation in the subsequent landscape design.[3]

In order to have a more comprehensive understanding of the current academic research on Olmsted, we selected CNKI database search data, entered "Olmstead" as the search keyword, obtained 1651 relevant literature data samples, exported the data and imported the literature. In the analysis software VOSviver, the literature data cluster analysis chart, the literature data year trend cluster analysis chart and the literature data thermal analysis chart were generated.

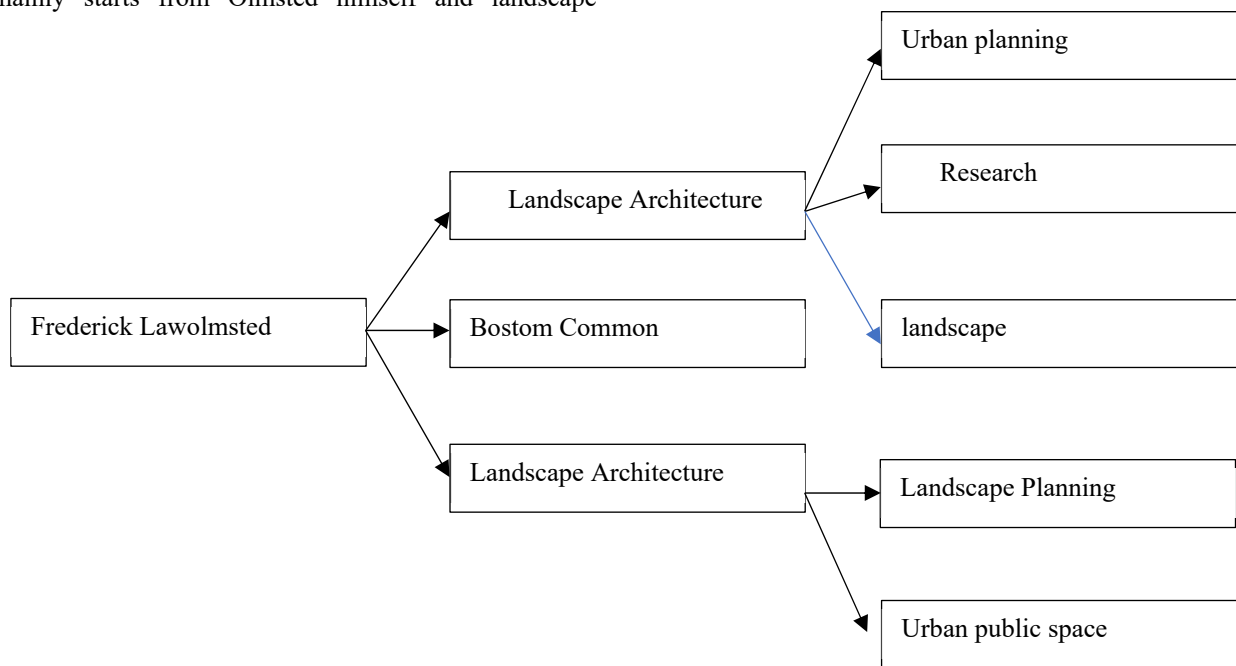


Figure 1 Cluster analysis diagram of Olmsted related literature

The first is the "Clustering Analysis Chart of Related Literature". In the figure, the cluster distribution of the main keywords is distinguished by 5 color systems. The main keywords are "Olmstead" and "Landscape Architecture" in green; "Central Park" are the main keywords in red. Yellow with "Landscape Planning " as

the main keywords; blue with "America" and " New York Central Park" as the main keywords; purple with "Boston Common" and "Landscape Architecture Design" as the main keywords. Among them, the two most mentioned areas are green and red clusters, and the ones that are more closely related are "Olmstead", "Landscape

Architecture", "Landscape Design" and "New York Central Park", it can be seen from the figure that the main research on Olmsted is still focused on himself, landscape architecture and his main design cases.

The second is the "Cluster Analysis Chart of Olmsted's Related Literature Year Trends". The figure shows the trend cluster analysis of sample years from 2006 to 2016 through the color change from dark blue to bright yellow. It can be seen from the figure that the darkest blue part is "Architecture Design", "Boston Common", "Landscape Architecture", "Olmsted" in the blue-green part; "Landscape Architecture", "New York Central Park" and "Urban Public Space" in the green part; and "Landscape Urbanism" and "Ecological Thought" in the yellow section of the nearest year. According to the research trend of the years, the research on Olmsted has changed from the initial disciplinary research to the research and analysis of designers' ideas and cases, and then to the combination of thinking expansion and urban public space. Among them, the extraction of "ecological thought" is the trend of research and development, and it is also a problem that needs to be paid attention to.

Finally, there is "Thermal Analysis of Olmsted Related Literature". The color change from blue to yellow in the figure represents the change of the calorific value of the concentration. The yellower the color, the higher the frequency of keyword occurrence, and the lower the frequency of occurrence on the contrary. The most prominent keyword in the figure is "Olmsted", indicating that the research on himself is still a mainstream hot spot, followed by "landscape architecture", and the third is "Central Park". It can be clearly seen from the figure that the research on Olmsted is based on himself, landscape architecture and the most famous case of New York's Central Park. It also emphasizes the importance and correlation of the three in the research process, which is also indispensable in subsequent research. [4]

4. CASE STUDIES

4.1. New York Central Park

In the 1850s, it was in the late stage of the first development stage of the American Industrial Revolution. The rapid development of social economy, technology and productivity led to the accelerated urbanization of the American metropolis led by New York, and the influx of a large number of people. Space is constantly being compressed, urbanization problems are beginning to emerge, and citizens' demands for fresh air, sunlight, and public spaces are increasing.

In the design of the park, Olmsted is influenced by the landscape of the British Natural Landscape Garden, and uses a variety of trees and shrubs to match. While fully

displaying the natural features, trees and shrubs are skillfully planted to demarcate the boundaries. In this way, the interior of the park can be protected from the hustle and bustle of the city, and an ideal space of freshness and nature can be isolated. In the selection of plant planting in the garden, he always follows the natural rules and the planting of native plants. As a result, the species of native plants in the garden are very rich. There are more than 180 species of deciduous trees, and more than 100 species of conifers and herbs. Local species such as black locust, wild cherry, and *Ailanthus sinensis* are distributed in large numbers. The abundant planting and the protection of native plants have created a good ecological circle for the natural landscape of the park, and also reduced the follow-up maintenance costs.

The plot of the required design area is long and narrow, the foundation is composed of swamps and rocks, and the conditions were not yet ripe for easy treatment. After analyzing the congenital plots and measuring the terrain height difference, Olmsted and Vox innovatively adopted the method of submerged interchanges to construct four east-west road crossing the park, which is different from the park, ensuring the park landscape. The integrity and safety of touring and walking solves the problem of road use at night.

In Olmsted's design concept, a very important point is that "the designed return road should basically pass through the entire courtyard". It is fully reflected on the 10-kilometer loop in the park. This Ring Park Avenue runs through major attractions such as the Central Park Zoo, the Dellacote Theater, and the Bethesda Fountain, and you can basically visit the entire park. Spread greenery on the outside of the wide lawn to creatively separate traffic and park views. According to the different activities of people, the roads are divided into lanes, riding lanes and human-shaped lanes. The intersections of these roads are solved by bridges or recessed passages, and low plantings are used to block people's sight, which not only meets the traffic requirements, and avoid interference. The design of New York's Central Park fully embodies Olmsted's idea of introducing natural beauty into the city in the form of a park, emphasizing the interesting feelings of visitors. And the artistic creation is the intention beyond the functional creation. Taking the countryside as the way out to solve urban problems and using the combination of urban and rural areas as a means, the Central Park is designed as a place with a strong pastoral flavor, allowing residents who have lived in the city for a long time to enter a quiet, clean and simple pastoral environment. [5]

It must be said that Olmsted's design concept is ahead of its time. Based on the needs of urban residents and the needs of urban ecology, in the context of the rapid development of American cities, this precious natural treasure was built predictably. The four seasons are beautiful here, with bright red and green in spring, bright

sunshine in summer, red maples like fire in autumn, and silvery white in winter. His predictive decisions and advanced design concepts have left an unrepeatable urban oasis for the city.

4.2. Emerald Necklace

From the high altitude of Boston, you can see a green belt that stretches for several kilometers, like a delicate blue necklace, hanging on the bustling central area of the city, this is the Boston Common system known as "Emerald Necklace". This park system planned and built more than 100 years ago, with a total length of 16 kilometers, cleverly connects several urban parks, and is recognized as the world's first real greenway.

At the end of the 19th century, Boston followed the footsteps of industrial development, and at the same time of rapid development, the problems of industrialization and urbanization intensified. The deteriorating urban environment, chaotic and congested traffic conditions and other urban problems have plagued the lives of Boston residents. Their inner desire to return to nature is getting stronger and stronger, hoping to find a place in the city where they can breathe fresh air and relax and entertain themselves. The construction of the Boston Commons system meets their needs.

The Boston Commons system does not refer to a single park. It cleverly links the scattered block parks into an organic whole through the parkway known as the "necklace" and the Suide River flowing through the city. This is where the fame comes from. Construction of the entire park system began in 1878 and lasted 17 years, bringing together nine urban parks and others: Boston Common, Public Garden, Commonwealth Avenue Mall, Back Bay Fens, The Riverway, Olmsted Park, Jamaica Pond, Franklin Park, and Arnold Arboretum. The green space system is connected in an orderly manner, forming a park greenway landscape that stretches for 16km. The Boston Common system fully demonstrates Olmsted's romantic feelings of "returning to nature" as a reformer of the urban environmental movement, leaving behind a valuable design philosophy. He insists that the design should be faithful to the characteristics of the natural environment, arguing that every natural environment has its own ecological and spiritual qualities, and that natural beauty is a necessary condition to alleviate the crowded urban environment. Based on this concept, he emphasizes the introduction of natural beauty into the city when creating each landscape, forming an idyllic natural style. At the same time, the park will provide a variety of venues, which are completely open to the outside world, without thresholds and restrictions, allowing people to Live in harmony with nature.

Olmsted vigorously rehabilitated the Charles River, which was faced with various problems such as flooding, serious pollution and water imbalance, through

comprehensive planning methods, successfully restored the natural state of the Charles River Basin, and built today's rural scenery park. The greenway system ingeniously connects numerous sites and monuments with optimal routes, and through the guide signs and detailed introductions of scenic spots along the way, it is convenient for tourists to visit various famous scenic spots along the greenway. The successful combination of historical respect and landscape renovation concepts, while striving to preserve the city's historic character, also injects new appeal.

5. CONCLUSION

Through the research on the theoretical origin of Olmsted's landscape art, the analysis of research status, and the case study, it is found that many concepts such as natural landscape protection, natural-style rules, and native plant planting advocated by him in the design process all reflect the ecological orientation. With the trend of ecological civilization construction and sustainable urban development in recent years, attention to ecological issues has become the consensus of many scholars. Research shows that the research on Olmsted, the founder of landscape architecture, is changing from "what" to "why". The focus of scholars is no longer on the construction of disciplines and the summary of cases. Instead, it rises to the study of concept theory, and explores Olmsted's methods and ideas to solve problems in the design process. The viewpoints of ecological aesthetics are refined and summarized, providing ideas for the development of landscape art.

The ecological aesthetics in Olmsted's landscape design is of great significance to the development of landscape architecture in the future. It is like a beacon of direction, illuminating the way forward, and providing solutions to the environmental and ecological problems facing human beings today. The research on his design ideas and cases is continuous and will change with the current development status, so the research of the article will continue to explore deeper ecological orientation and aesthetic ideas, combining landscape design, architectural design and public art and other multidisciplinary fields, to explore the sustainable development path of harmonious coexistence of city, art and ecology.

AUTHORS' CONTRIBUTIONS

This article is written by the author himself.

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REFERENCES

- [1] Song Yongchang, Urban Ecology [M], in: East China Normal University Press, 2000, pp. 3.
- [2] Zang Suhui, Symbiosis of Art [M], Ecology and City, in: Shanghai Renmin Chubanshe, 2017.
- [3] Duempelmann, Herrington. Plotting Time in Landscape Architecture [J] , in: Studies in the History of Gardens & Designed Landscapes, 2014.
- [4] ANDREW MENARD. The Enlarged Freedom of Frederick Law Olmsted [J] , in: The New England Quarterly, 2010.
- [5] Carol J. Nicholson. Elegance and Grass Roots: The Neglected Philosophy of Frederick Law Olmsted [J] , in: Transactions of the Charles S. Peirce Society, 2004.