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Ecotope-based Urban Post-industrial Landscape Design

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Abstract

In order to optimize urban ecology landscape, use land source efficiently and cut down resource waste, this paper discusses the post-industrial landscape design concept and restoration from the perspective of the industrial wasteland, and analyzes the design of ecological environmental protection, restoration, functionality and landscape elements with specific case. This paper contributes to urban post-industrial landscape design.

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1. Introduction

With the process of urbanization, abundant wasted idle lands in urban region waste resource as well as destroy the ecology landscape of the city. American and European countries take the lead in applying ecological thought to the landscape restoration of wasted land, which have a broad impact and sought after by many designers. The introduction of eco-industrial landscape design ideas generates a major shift as well as changes the city's image. China's post-industrial landscape design thoughts and new technologies is constantly evolving, however, its ecological development trend cannot be reached only with ecological methods and localism, nationalism and modern arts are also needed. In this paper, starting from industrial wasted land, we analyze the five ecological design patterns of industrial wasted land after discussing post-industrial landscape design related theories, principles and guiding ideology. Then through case studies of

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some waste land restoration with broad implications at home and abroad, we analyze the ecological connotation, explore and research the ecological design ideas and methods, summarize and propose urban wasteland landscape ecological design patterns, and strategies and methods of ecological restoration.

2. Ecological Planning and Design of Post-industrial Landscape

2.1. Design Philosophy of Post-industrial Landscape

Industrial landscape design must focus on the return of ecological sense. It can let the new communicate with history as well as make it possible for the past to gain rebirth, forming a harmonious and whole landscape of industrial heritage. The creation of industrial heritage site largely depends on space integration, especially integrating the relation among heritage site and periphery, and overall environment, restoring as well as promoting it. Followings are principles must be considered in the post-industrial landscape design, as shown in Table 1.

Table 1. Post-industrial Design Philosophy

Post-industrial Design Philosophy	Details
Least Interference	Require the designers to design with ecological principles. Minimize or protect the natural environment from human disturbance
Respect the process of ecological site development	Respect the natural development process and enhance the site self-sustaining.
Ecological Protection	Reserve industry resource with great historical significance and conduct landscape protection design, seeking for re-explanations for structure and elements of old landscape
44R Principle	Cut down reuse, recycle, regeneration, reappear
Combine Technology and Art with Functions	Satisfy the function of the society. Make full use of the original buildings and facilities. Give new functions.
Security Policy	Physical environmental safety and psychological safety

2.2. Ecological Design philosophy and Restoration in Post-industrial Landscape

We analyze the ecological factors and species ecological relationships of regional landscape and minimize the damages to original natural environment by rational designs and projects to protect ecological system. Landscapes suited for local environment and regional culture can be achieved with local bioclimate and landform and by making full use of local building materials and plant materials and coordinating ecosystem to ensure site environment and biodiversity and minimize human interference. We combine modern technologies with traditional methods by rational design and space-time with applying ecology system and system science, so that the landscape system remains healthy material, energy circulation, and achieving restoration and control technology with harmonious development between man and nature. At present, the widely used technologies are revegetation technology, reconstruction technology and comprehensive treatment technology for waters. The specific design philosophy and restoration technology is shown in Figure 1.

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