

# 2010 International Conference on Optimization Design

## ICOD 2010

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# "Oasis" Eco-park Landscape Design and Rainwater Utilization

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**Abstract**—A modern competitive city must be of a good ecological environment and landscape, and. The city's development must be compatible with the natural environment, and the virtuous circle can provide sustainable impetus for the society. The construction of the ecological landscape must conserve enough green space in the future. In order to achieve a good result we integrate the ecological landscapes, rainwater utilization and the natural water cycle. It is believed that numbers of the eco-garden "point" will come together into a green "face", then our city can be turned into a green forest and attractive home.

**Keywords**-eco-landscape; rainwater utilization; landscape design, ecology; City

## I. INTRODUCTION

As China's urbanization development and economic take-off, urban construction and urban landscape has rapidly developed, wide flat streets, large and small squares, uniform green, so that Chinese cities look more beautiful, but the changes of the city's appearance does not bring a corresponding improvement of the urban climate. In recent years, some of China's Cities suffer from the dusty storm and the heavy rain. For instance, on July 18, 2007 a sudden heavy rain hit Jinan City, Shandong Province, the poor city changed from a "Spring city" into a "water city". The streets turned into rivers, underground shopping malls become a big pond. The heavy rain resulted in the great economic losses and heavy casualties. How are our cities? Why do they become so irritable and heartless? With the beautiful face the city is indeed so vulnerable.

The rainwater gardens, ecological landscape design concept is very prevalent in the United States in 1980s and 1990s. Residential areas in some cities are no longer blindly hardened the ground, but the attention to rainwater infiltration and ecological balance. The most famous is the "ArE Siskiyou" reconstruction project in Portland. After the transformation, there is much less pressure on municipal drainage, because runoff water, pond water and groundwater form a good natural water cycle and also a pleasing urban landscape. For another example, professional design 2008 ASLA Honor Award - bordered by a lake channel design (Passage to the Lake) is Michael Van Valkenburgh, a landscape architecture designed by landscape class residential project. The project site in the United States, Maine Stoneham City, is a residential lake access road and landscape design.

The houses take advantages of the lake's natural landscapes, clever design of the road, the greatest degree of hardening and the road avoid the damage to the environment. Lake of the wooden tables in the design simple and beautiful scenery, a variety of landscape design elements are actually used well.

At present, China's construction of a conservation-based Urban Green Space is also strongly advocated, and the so-called saving green space is "the least amount of land, the least water, the least the financial allocations, the least disturbance to the surrounding ecological environment of the green model.

## II. "OASIS" ECOLOGICAL GARDEN LANDSCAPE DESIGN

Our case locates at the northern suburbs of Jinan with a total area of 300 acres and slowly tilts from southwest to northeast. Throughout are warm and humid monsoon climate. After the completion of the project set of dining, spa vacation, fishing, cultivating and selling flowers and plants, especially in shallow buried geothermal, mining, low cost, water temperature 52-62°C, the water is clear, rich in lithium, strontium, bromine, iron, etc. minerals and trace elements, are very seductive.

The project includes catering, spa vacation, fishing, nursery places for an integrated operation, including fishing ponds, regional location has been set, position in the land of the south-west, the entire project on the ground gently from northeast to southwest tilt the terrain started to design exactly in line with our idea: the rain from the northeast to southwest flow of such big terrain without the rectification, earthwork greatly reduced. local shape terrain, the basic use of the original terrain. Moreover, in addition to the main road outside the alternative routes are arranged to maximize the use of the permeable ground.

Item terrain is very simple, vertical change little, the highest point and lowest point of elevation difference 1.5 meters, the final decision to the southwest to the northwest side of the pond soil accumulation, in this orogeny. Hot Springs, accommodation, catering peripheral set to form a mountain, water, forest, housing patchwork landscape. Room quiet elegance, hot springs gurgling sounds make us feel pleasure. The main entrance of the venue and the municipal road between a 4-meter wide river, the two sides covered with reeds, weeds. We make use of them finishing in the river side of the construction of a permeable pavement for leisure, and to river water and the park connecting the water