



Improved Gradation for Rain Garden of Low Impact Development

Sandra Lee (1) and Fu-Ming Chang (2)

(1) National Taiwan University, Department of Horticulture and Landscape Architecture, Taipei, Taiwan, Province Of China (sandrale@ntu.edu.tw), (2) Department of Civil Engineering, National Taiwan University, Taipei, Taiwan, Province Of China (d97521010@ntu.edu.tw)

With rapid urban and economic development, living standard improves in urban areas but urban ecological environments deteriorate rapidly. Urban waterlogging and flooding have become a serious problem for urban water security. As urbanization continues, sustainability is the key to balance between urban development and healthy environment.

Rain garden is recommended to be one of the best ways to reduce urban pollutants. It not only diminishes runoff flooding but also purify water in the urban area. The studies on rain gardens are mainly about how to incorporate rain garden to purify water quality, but lack of researches on runoff control.

This project focuses on rain garden under Low Impact Development using indoor laboratory to test and quantify the water holding capacities of two different Taiwan indigenous rain garden plants, Taiwan Cyclosorus and Sour Grass. The results show that the water holding capacity of Sour Grass (10%-37%) is better than that of Taiwan Cyclosorus (6.8%-17.3%). The results could be a helpful reference for Low Impact Development in urban flood prevention and urban planning.

Keywords: Low Impact Development; rain garden; indoor laboratory experiments; water holding capacity; porosity