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NATURE-BASED SOLUTIONS FOR FLOOD MANAGEMENT: A STUDY CONDUCTED IN LABARO - PRIMA PORTA DISTRICT, ROME, ITALY

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Abstract

‘Labaro-Prima Porta’ is a district in the outskirts of Rome, increasingly afflicted by recurrent floods. In order to reduce the local runoff volume, this paper defines a resilience and twofold strategy. At first, the use of a hydrologic software, called Storm Water Management Model (SWMM), along the research makes possible the evaluation of which Nature-based Solutions (NbS) are more effective in terms of runoff management. The results demonstrate short-term positive effects, with an immediate reduction of the local discharge of about 8%. The second phase of the study explores the possibility of designing a resilient ‘Labaro-Prima Porta’ district. A master plan, structured in two overlapping scales, is proposed. One large-scale, improving the ecological network of the Veio Park and the rivers close to the urban settlements; in the second layer a green blue infrastructure at the district scale is defined, including a 3.3 km greenway as an urban and ecological corridor. The overall objective of this study is to provide theoretical support for the “sponge city” theory.

Key words: hydro-ecological infrastructure, landscape design, SWMM, nature-based solutions, sponge city, urban water management

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