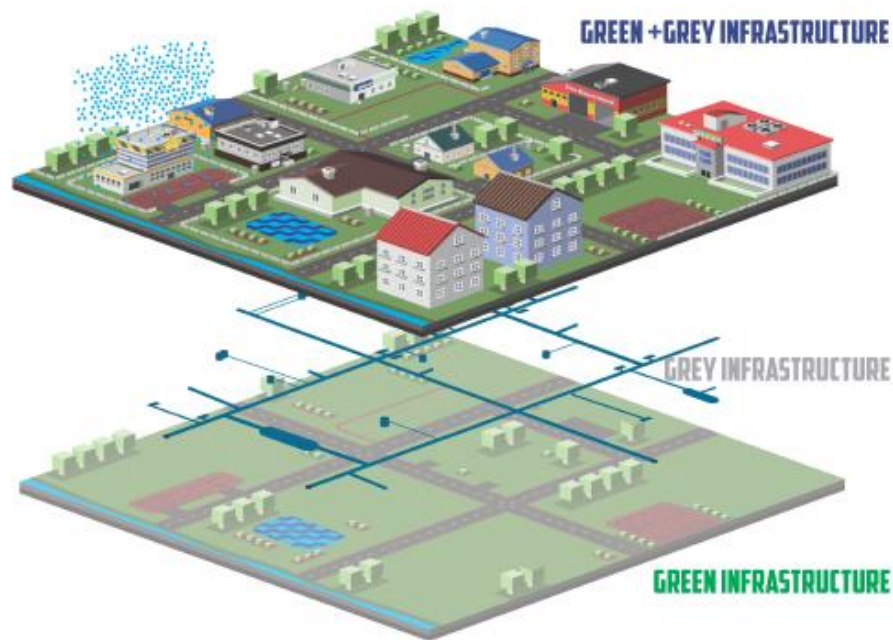




Evaluation of Green and Grey Infrastructures for Runoff and Pollutant Reduction

Carlos Arturo Martínez Cano



Nowadays, economic development, urbanisation and heavy rainfall events are present in urban areas. A major change in approaches to the management of flooding is also ongoing in many countries worldwide. There are some decision support system tools available to evaluate green and grey infrastructures across a wide range of conditions as well as to compare alternative options. However, the performance of urban drainage systems that combines different green-grey solutions is still unclear. The present book introduces a framework for evaluation of the performance of green and grey infrastructures for runoff and pollutant reduction. To this end, it presents an evaluation of how different combinations of

green infrastructure (GI) measures perform within a drainage system to reduce runoff and pollution and how the interactions between different grey infrastructures can influence the drainage system capacity. The modelling approach introduced here also combines the infiltration process, overland flow and sewer system interactions to assess the optimal combination of green-grey infrastructures for urban flood reduction. The results of this research demonstrate that including rainfall-runoff and infiltration processes, along with the representation of GI within a 2D model domain, enhances the analysis of the optimal combination of infrastructures, which in turn allows the drainage system to be assessed holistically.

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Atentamente,


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