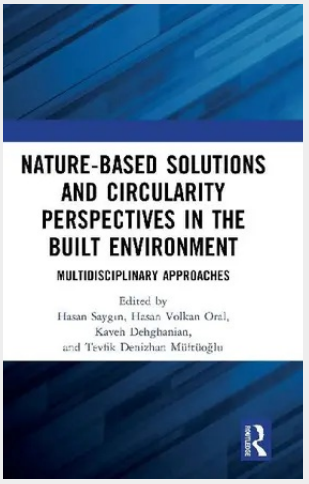
Saygin / Oral / Dehghanian

Nature-based Solutions and Circularity Perspectives in the Built Environment

Multidisciplinary Approaches



The main purpose of this book is to examine the applications of nature-based solutions (NBS) and circularity in the built environment from a multidisciplinary perspective, but with a focus on energy, civil, and environmental engineering. The book is therefore divided into three sections, energy management, hydrology and water management, and applications of sustainable natural resources in soil improvement in the built environment. Section 1 introduces the concepts of circularity and NBS in the built environment with a focus on energy management in buildings and infrastructure through case studies of auditing, assessment, and best practice in design. Section 2 examines NBS in the form of water management. Chapters cover urban and rural resilience in water management, the circular design of waste management and NBS in coastal contexts. In Section 3, chapters and case studies present solutions that can be applied to improve the physical and mechanical properties of the soil. It presents viable options for sustainable reuse of construction materials from civil infrastructure projects, and industrial wastes in soil improvement. This book is important reading for researchers and professionals in civil engineering, water engineering, coastal engineering, sustainable infrastructure design and urban planning.

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