

Preface

Currently, the construction industry has the most detrimental impact on the environment. On the one hand, constructions generate an environmental impact through the use of necessary resources and the generation of greenhouse gas emissions during the construction process. On the other hand, buildings consume large amounts of energy once they are in use. For this reason, it is necessary to develop efficient designs to mitigate the environmental impact of buildings during their different phases, with the goal of achieving a low-carbon building stock by 2050.

Energy policies are promoting decarbonization of the built environment using the nearly zero-energy building concept. However, the technological challenges to achieve nearly zero-energy buildings are great. As such, it is necessary to carry out research on innovative materials and designs. This book summarizes research in this area over three sections: "Materials," "Design," and "New Approaches." It includes twelve chapters that present current knowledge about nearly zero-energy buildings, which is crucial for academics, researchers, architects, engineers, and professionals in the building and construction sector.

David Bienvenido-Huertas

Department of Building Construction,
University of Granada,
Granada, Spain