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Abstract

This book is aimed at students and young scientists in the field of physical sciences, not to analyse the laws of physics with mathematical equations, but to inform them about the possibilities of technology in the field of Renewable Energy Sources, which can be integrated into the concept of bioclimatic design. Their application in the urban planning will help achieve an improvement of the natural environment, along with a contemporary reduction in energy expenses. It is necessary, therefore, to initially analyse the greenhouse effect, the observed climate change, and the phenomenon of urban heat island, which affect the conditions of thermal comfort for humans.

Subsequently, the possibilities offered by bioclimatic architecture to improve the natural environment, both indoors and outdoors, are examined. The existing technologies associated with solar, wind, and geothermal energy, as well as bioenergy for the production of economically viable "green" energy are discussed. Finally, innovative construction materials that help reduce indoor air pollution in buildings, lowering the requirements for their ventilation and purification are also mentioned. Each chapter of the book provides only general information, as each of these topics constitutes a separate subject within the fields of environmental physics and architecture.

