

Preface

In Japan, various urban heat island measure strategies have been developed, and their effectiveness has been verified in several applications such as cool roofs, green roofs, cool pavements, heating, ventilating and air conditioning systems with little exhaust heat, and wind paths in urban areas. Based on the various research findings, the Architectural Institute of Japan published the 'Cool Roof Guidebook' in Japanese in March 2014.

The author has lectured to students from the Department of Architecture undertaking the 'urban environmental planning' undergraduate course and to students undertaking the 'urban environment systems' masters course; this book is at a similar level to the content of the lectures. This book provides an overview and a systematic description of the features and effects of urban heat island countermeasure technologies. It also describes the evaluation methods of the countermeasure effects of these technologies. The book is unique because it describes the optimal selection methods of urban heat island countermeasure technologies according to regional climate, topography, land use, urban block form, building shape and location in outdoor spaces, etc.

Most of this book is based on the results of research conducted by the author and Emeritus Professor Masakazu Moriyama, with the cooperation of various collaborative companies, researchers in other universities and research institutes, and many students from Kobe University. This book is a cooperative achievement between Emeritus Professor Masakazu Moriyama and the author. We received valuable advice regarding cool roof and cool pavement research from Prof. Hashem Akbari of Concordia University, Canada, who is a leading expert in this field. We also received various advice and ideas about climate analysis for urban planning from Prof. W. Kuttler, Prof. H. Mayer, Prof. J. BaumueUler, Prof. E. Parlow, Prof. G. Gross, and Prof. A. Matzarakis of Germany. The author is very grateful to everyone for the support he received from Japan and overseas.

Improvement Measures of Urban Thermal Environment

Takebayashi, H.

2015, IX, 42 p. 61 illus., Softcover

ISBN: 978-3-319-13784-1