


The Future of Buildings: Smart & Autonomous



Deniz Karahan

The Future of Buildings: Smart and Autonomous



1st. Edition

April 2023



© 2023

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically to be entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in its current version, and permission for use must always be obtained from the publisher. Permission for use may be obtained through the Rights Link at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.

The use of general descriptive names registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use. While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, concerning the material contained herein.

Printed digitally.

Content

- 1.1 The smart buildings sector 7
- 1.2 What is a smart building? 14
- 1.3 The essential components of smart buildings 17
- 1.4 The infrastructure of smart buildings 18
 - 1.4.1 The Physical Infrastructure 18
 - 1.4.2 The Data Infrastructure 19
- 1.5 Some measures and technologies of smart buildings 19
- 1.6 Business drivers of smart building 20
- 1.7 The Major Challenges of smart buildings 21
- 1.8 The benefits of smart buildings 21
- 1.9 The Internet of Things (IoT) 22
- 1.10 Sensors 28
- 1.11 Green Buildings 34
- 1.12 Building energy simulation 37
- 1.13 The Cloud Computing 39
- 1.14 Human as a Sensor in buildings 41
- SOURCE & REFERENCES 44
- LIST OF FIGURES & TABLES 44
- LIST OF ABBREVIATIONS 44
- INDEX 45