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Nota di contenuto	Part I. Concepts in Sustainability -- Chapter 1.The Problem is also the Solution: The Sustainability Paradox -- Chapter 2.Appreciating the Wicked Problem: A Systems Approach to Sustainable Cities -- Chapter 3.Circular Economy Research in the Built Environment: A Theoretical Contribution -- Part II. Building Information Modelling -- Chapter 4 -- 1. Building Information Modelling: A Paradigm Shift in Construction – Farzad Khosrowshahi Iterative design using agile project management and BIM to improve building performance -- Chapter 5.Use of simulation through BIM-enabled Virtual Projects to enhance learning and soft employability skills in Architectural Technology education -- Chapter 6. Development of a Building Information Modelling (BIM) based real-time data integration system using a Building Management System (BMS) -- Chapter 7.Procurement route and Building Information Modelling (BIM) implementation effect on sustainable Higher Education

Refurbishment' projects -- Part III. Building Performance and Design -- Chapter 8.A novel transient experimental method for in situ measurements of the thermal performance of building fabrics -- Chapter 9.Energy Performance Analysis of Residential Buildings in Saudi Arabia (Multi Case Study) -- Chapter 10.Fossil fuel reliant housing in Nigeria: physio-climatic regionalism as an energy/cost efficient perspective to providing thermal comfort -- Chapter 11. Predicting future overheating in a Passivhaus dwelling using calibrated dynamic thermal simulation models -- Chapter 12. Benefits and challenges of visualising embodied and whole life carbon of buildings -- Chapter 13. Models for Sustainable Electricity Provision in Rural Areas Using Renewable Energy Technologies – Nigeria Case Study -- Chapter 14. Energy Mapping Using Publicly Available Data for Urban Energy Retrofit -- Part IV.Smart Construction -- Chapter 15.-Things change: exploring transformational experiences within the UK construction industry -- Chapter 16.In-Situ Thermal Transmittance of Case Studies In Dublin -- Chapter 17.It's House-Building but not as We Know It: The Impact Of Neighbourhood Planning On Development In England -- Chapter 18. Integrated Façade System for office buildings in hot and arid climates: A comparative analysis -- Chapter 19.Decarbonising construction using renewable photosynthetic materials -- Chapter 20.The replacement of wood or concrete in construction projects – an industrial case study demonstrating the benefits of intrusion moulded mixed waste plastic.

Sommario/riassunto

This book charts the path toward high performance sustainable buildings and the smart dwellings of the future. The volume clearly explains the principles and practices of high performance design, the uses of building information modelling (BIM), and the materials and methods of smart construction. Power Systems, Architecture, Material Science, Civil Engineering and Information Systems are all given consideration, as interdisciplinary endeavours are at the heart of this green building revolution.