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Autore	Lynn Theo
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Altri autori (Persone)	RosatiPierangelo KassemMohamad KrinidisStelios KennedyJennifer
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Nota di contenuto	Chapter 1. Deep Renovation: Definitions, Drivers and Barriers -- Chapter 2. Embedded Sensors, Ubiquitous Connectivity and Tracking -- Chapter 3. Building Information Modelling -- Chapter 4. Building Performance Simulation -- Chapter 5. Big Data and analytics in the context of deep renovation lifecycle -- Chapter 6. Digital Twins and Their Roles in Building Deep Renovation Lifecycle -- Chapter 7. Additive Manufacturing and the Construction Industry -- Chapter 8. Intelligent Construction Equipment and Robotics -- Chapter 9. Cybersecurity Considerations for Deep Renovation -- Chapter 10. Financing building renovation: Financial technology as an alternative channel to mobilise private financing.

The world's extant building stock accounts for a significant portion of worldwide energy consumption and greenhouse gas emissions. In 2020, buildings and construction accounted for 36% of global final energy consumption and 37% of energy related CO₂ emissions. The EU estimates that up to 75% of the EU's existing building stock has poor energy performance, 85–95% of which will still be in use in 2050. To meet the goals of the Paris Agreement on Climate Change will require a transformation of construction processes and deep renovation of the extant building stock. It is widely recognized that ICTs can play an important role in construction, renovation and maintenance as well as supporting the financing of deep renovation. Technologies such as sensors, big data analytics and machine learning, BIM, digital twinning, simulation, robots, cobots and UAVs, and additive manufacturing are transforming the deep renovation process, improving sustainability performance, and developing new services and markets. This open access book defines a deep renovation digital ecosystem for the 21st century, providing a state-of-the art review of current literature, suggesting avenues for new research, and offering perspectives from business, technology and industry domains. Theo Lynn is Full Professor of Digital at DCU Business School, Ireland. He is Series Editor on the Palgrave Studies in Digital Business & Enabling Technologies. Pierangelo Rosati is Associate Professor of Digital Business & Society at the University of Galway, Ireland and is Series Editor on the Palgrave Studies in Digital Business & Enabling Technologies. Mohamad Kassem is Professor of Digital Construction Management at Newcastle University, United Kingdom. Stelios Krinidis is an Assistant Professor at the Department of Management Science & Technology of the International Hellenic University, Greece and a Post-Doctoral Researcher at the Centre of Research & Technology Hellas, Greece. Jennifer Kennedy is a Postdoctoral Researcher at the Irish Institute of Digital Business at DCU Business School, Ireland.
