1. Record Nr. UNINA9910917199703321

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Titolo	Unlocking the Potential of Building Envelopes : Sustainable and People-Centered Approach to Reduce the Environmental Footprint of the Built Environment / / by Andrea Giovanni Mainini, Tiziana Poli, Alberto Speroni, Matteo Cavaglià, Juan Diego Blanco Cadena
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	9783031752988 9783031752971
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (144 pages)
Collana	PoliMI SpringerBriefs, , 2282-2585
Altri autori (Persone)	PoliTiziana SperoniAlberto CavagliàMatteo Blanco CadenaJuan Diego
Disciplina	720.47 696
Soggetti	Sustainable architecture Climatology Sustainability Renewable energy sources Sustainable Architecture/Green Buildings Climate Sciences Renewable Energy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1.The evolution of building envelope design in the digital and ecological transition -- 2.The relevance of performance-based design within early-stage design -- 3.Decarbonization-driven design: energy-efficient, responsive, zero-emission, positive, advanced materials, sustainable alternatives for the building envelope -- 4.Human-centric design: comfort, well-being, and health cognitive in building envelope design -- 5.Parametric building envelope design and technology integration -- 6.Investigating decision-making frameworks for early-stage performance-based building envelope design -- 7.Unlocking the

Future: Innovations in Building Envelope design.

Sommario/riassunto

This book delves into the performance-based design approach, highlighting the necessity for bespoke, adaptive, and cognitive building envelopes that promote sustainable and positive behaviors throughout their lifecycle. A key to unlock the building envelope's potential is the integration of advanced digital tools such as building information modeling (BIM) and digital twin technology, which enable accurate simulation and optimization of energy efficiency, decarbonization, and human-centric design aspects. Moreover, the work emphasizes the importance of a user-centered approach in designing interactive and connected building envelopes, thereby fostering sustainable behaviors among occupants. This focus on user engagement and education in optimizing building envelope utilization not only contributes to reducing the environmental impact but also enhances the quality of life, well-being, and health of occupants. In the era of digital and ecological transition, the book serves as an essential guide to design and operate energy-efficient, responsive, and user-friendly building envelopes, paving the way for a future where the built environment is a significant contributor to sustainability and human health.