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Autore	Davray, Jean
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Nota di contenuto	; 1. Introduction / Mohamad Kassem, Abel Maciel and Daniel Hall -- ; 2. Distributed ledger technologies, blockchain and smart contracts: technical foundations and key concepts / Mahir Msawil, Mohamad Kassem and David Greenwood -- ; 3. Socio-technical approach to blockchain adoption in construction: conceptual models and roadmaps for macro- and meso-scale implementation / Jennifer Li, David Greenwood and Mohamad Kassem -- ; 4. Enhancing information security and digital trust in construction: decentralisation and encryption approaches / Moumita Das, Jack C.P. Cheng and Xingyu Tao -- ; 5. Blockchain and tokenization of built assets / Lavinia Chiara Tagliabue, Paolo Mistrangelo and Algan Tezel -- ; 6. Digital building logbooks on the blockchain: first conceptualisation and future research directions / Theodoros Dounas, Daniel M. Hall, Dimosthenis Kifokeris, David Christie, Jens Hunhevicz, Firehiwot Kedir, Joseph Mante, Goran Sibenik, Marijana Sreckovic, Lavinia Chiara Tagliabue and Catherine De Wolf -- ; 7. Blockchain for energy management in seaport infrastructure: a microgrid case study / Alexander James Howe, Ioan Petri and Yacine Rezgui -- ; 8. Decentralising architectural design through data governance / Theodoros Dounas, Davide Lombardi and Hico McDonald -- ; 9. Blockchain in construction supply chain management / Liupengfei Wu, Jinying Xu and Weisheng Lu -- ; 10. Blockchain for data observability: integrating BIM, digital twins and enterprise CDEs / Abel Maciel and Klaudia Jaskula -- ; 11. Blockchain and contract administration in construction / Mahir Msawil, David Greenwood and Mohamad Kassem -- ; 12. Legal risks for blockchain applications in the built environment: a legal perspective / Gavin P. Johnson -- ; 13. Conclusions: cross-cutting themes, challenges and recommendations / Mohamad Kassem, Abel Maciel and Daniel Hall.
Sommario/riassunto	"The built environment, encompassing the spaces we inhabit, the infrastructure that connects us, and the systems that sustain our societies, is foundational to human progress. It shapes how we live, work and interact, serving as a fundamental for social and economic prosperity. Yet, despite its importance, the sector faces enduring challenges: inefficiencies, insufficient collaboration, significant environmental impact, and a slow pace of transformative innovation, particularly in areas such as value creation, business model evolution, and major sector-wide transformations. Digitalisation and digital transformation, driven by technologies such as building information modelling (BIM), the internet of things (IoT), artificial intelligence, and immersive technologies, have become essential in helping the sector address these issues. More recently, distributed ledger technologies (DLT), such as blockchain and self-executing contracts like smart contracts, have emerged, offering further opportunities for the built environment. Emerging evidence, as explored in this book, highlights DLT's capabilities in transparency and trust (immutable records and enhanced accountability), efficiency and automation (smart contracts and streamlined processes), data security (decentralised integrity), collaborative governance (shared decision-making), tokenisation (democratised ownership), integration (synergy with digital twins, BIM and IoT), and sustainability (circular economies, renewable energy). However, adoption in the built environment faces several challenges,

including legal, technical, ethical and stakeholder barriers. Combining theoretical and practical perspectives, this book examines the potential of blockchain and DLT in both the delivery and management of the built environment, addressing their adoption frameworks, applications and associated benefits and challenges. Intended for researchers, practitioners, students, technology developers and policymakers, Blockchain, Smart Contracts and Distributed Ledger Technologies in the Built Environment: Key concepts, technologies, and applications is a comprehensive guide to the adoption and integration of DLT in the built environment."--Provided by publisher.