

1. Record Nr.	UNINA9910495193303321
Titolo	Wood additive technologies : application of active design optioneering / / Federica Brunone [and three others]
Pubbl/distr/stampa	Cham, Switzerland : , : Springer International Publishing, , [2021] ©2021
ISBN	3-030-78136-4
Descrizione fisica	1 online resource (191 pages)
Collana	Springer Tracts in Civil Engineering
Disciplina	620.11223
Soggetti	Building materials - Biodegradation Sustainable architecture
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	<p>Intro -- Preface -- Acknowledgments -- Contents -- About the Authors -- 1 Existing Building Transformation: Current Drivers, Issues, and Possibilities -- 1.1 Additive Strategies for the Transformation of the Existing Building Stock -- 1.2 Acting on the Built Environment -- 1.2.1 A Complex Framework: Domain, Standards, and Virtuous Examples -- 1.3 A Taxonomic Approach on Building Transformation and the Definition of "BAEIOU" Strategies -- 1.3.1 Additional Strategies Taxonomies: Top-Down and Bottom-Up Approaches -- 1.3.2 A Different Taxonomic Approach: Building Above, bEsde, Inside, Outside, and Under (BAEIOU) -- References -- 2 A New Taxonomic Perspective on Wood-Based Technologies for the Transformation of the AEC Sector -- 2.1 Wood as a Construction Material: Innovations Within Processes and Products -- 2.1.1 Wood Dimensions -- 2.2 Timber Construction Systems: A Taxonomic Perspective -- 2.2.1 The Taxonomic Approach to Building Systems -- 2.2.2 Timber Construction Systems -- 2.3 Timber Construction Strategies for Building Transformation: Applied Solutions from Realized Case Studies -- 2.3.1 Timber Construction Systems Within the Additive Retrofit Strategies: The Outcomes from the Case History Analysis -- References -- 3 An Innovative Method for the Management of the Building Process -- 3.1 Building Design Process and IT: Ongoing Developments -- 3.2 A BIM-Based Active</p>

House Tool for the Parametric Evaluation and User-Centered Visualization of Data -- 3.2.1 A BIM-Based Management of Data, Information, and Evaluation Parameters -- 3.2.2 The Active House Vision as a BIM-Ready Platform of Requirements -- 3.2.3 From Active House to Taleah: A Parametric Upgrade of Multidimensional Evaluation -- 3.2.4 The Evaluation Across the Entire Building Process: Design Optioneering, Construction Check, and Cognitive Building. 3.2.5 The Matter of Data Visualization: Engagement and Communication with the Final User -- References -- 4 A Validation Opportunity: Case-Studies Analysis and Outcomes on the Application of the Method on Real Buildings -- 4.1 Set-Up of the Methodology for the Real Case Studies -- 4.1.1 Design Optioneering Set-Up -- 4.1.2 Cognitive Building Set-Up -- 4.2 Case Studies: 1 + 1 House and N + 1 dome as First Examples -- 4.3 Application Results and Discussions -- 4.3.1 Design Optioneering, Construction Check, and Cognitive Building Results -- 4.3.2 1 + 1 House and N + 1 dome: The Comparison Between Two Different Transformation Strategies -- 4.4 Research Outcomes and Conclusions -- References -- 5 From Cognitive Buildings to Digital Twin: The Frontier of Digitalization for the Management of the Built Environment -- 5.1 CAD/CAM/BIM: New Codes for an Integrated Building Process -- 5.2 Building Process and BIM Dimensions -- 5.2.1 BIM Tools and Environments for the Evaluation of the Building Behaviour into a Data-Driven Process (6D) -- 5.2.2 From Design to Operation: IoT in the AEC Sector for the Management of Building Assets Towards the Definition of Cognitive Buildings (7D) -- 5.2.3 Informed Building Processes for the Existing Building Stock Management and Transformation -- 5.3 N + 1 Dome a Case Study for the Application of BIM -- 5.4 PIM and AIM: The Integration of BIM for Facility Management -- 5.5 Digital Twin: IoT for the Construction Sector and Existing Building Management -- References -- 6 Timber-Based Transformations of the Built Environment: A Portfolio of Case Studies -- 6.1 Timber-Based Solutions: Best Practices and Beyond -- References.

---