1. Record Nr. UNINA9910627240603321 Autore Di Paola Francesco Titolo Parametric experiments in architecture: a connection joint design for sustainable structures in bamboo / / Francesco Di Paola and Andrea Cham, Switzerland:,: Springer,, [2023] Pubbl/distr/stampa ©2023 **ISBN** 3-030-96276-8 Edizione [1st ed. 2023.] Descrizione fisica 1 online resource (XVIII, 127 p. 124 illus., 90 illus. in color.) Collana UNIPA Springer Series, , 2366-7524 Disciplina 720.47 Soggetti Sustainable architecture Bamboo construction Lingua di pubblicazione Inglese **Formato** Materiale a stampa Monografia Livello bibliografico Algorithmic-generative Architecture -- Bamboo as building material --Nota di contenuto Algorithmic modelling and prototyping of a joint for reticular space structures -- Structural patterns for free-form surfaces -- Different possibilities of experimentation Design. Sommario/riassunto This book offers a comprehensive overview of the use of bamboo in the building industry. It systematically demonstrates bamboo's utility in terms of its properties, describing the material properties of typical industrial bamboo products, and discussing their performance evaluation and optimization as building components and in the creation of building envelopes. The book presents the recent developments regarding the innovative ways to design and represent architecture through parametric survey tools, and describes the experimental geometrical-generative design process of a connection joint for free-form lightweight structures employing beams made of bamboo culms. It examines algorithmic-generative design themes. through processes of optimization, analysis, and geometrical-spatial verification, employing the potential of digital form-finding design and

digital manufacturing techniques to validate the defined technological solution. This book appeals to scientists and professionals and is a valuable resource for civil engineers, designers and students interested

in this unique plant material and its application in the building industry. Videos via app: download the SN More Media app for free, scan an image or a link with play button and access the videos directly on your smartphone or tablet.