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Andrea Quartara · Djordje Stanojevic

Computational and Manufacturing Strategies

Experimental Expressions of Wood
Capabilities

 Springer

Andrea Quartara
Genoa, Italy

Djordje Stanojevic
Guadalupe, Nuevo León
Mexico

ISSN 2199-580X ISSN 2199-5818 (electronic)
SpringerBriefs in Architectural Design and Technology
ISBN 978-981-10-8829-2 ISBN 978-981-10-8830-8 (eBook)
<https://doi.org/10.1007/978-981-10-8830-8>

Library of Congress Control Number: 2018951903

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Preface

This book is directed towards architecture students and practitioners who are interested in exploring both design-to-fabrication opportunities and challenges. It intends to establish a logical design workflow that is valuable on an educational level and that can stimulate designers' creativity. Computational and Manufacturing Strategies is based on the Ph.D. thesis titled "Post-Digital Reflections" by A. Quartara, submitted to the Department of Architecture and Design (DAD) at the University of Genova (UNIGE) in 2017 as well as the research by D. Stanojevic on material enhancement and its computational form conducted over the last 2 years. The book presents work related to digital design, CNC fabrication and wood as a construction material.

Computational and Manufacturing Strategies first introduces theoretical foundations and subsequently focuses on the possibilities that emerge from material-aware design processes. The first part of the book presents the selected important contributions from the many that have played an important role in this field of research. These are presented in the form of a story that the authors believe will be valuable particularly for students of architecture. The first chapter outlines a speculative background and experiential projects are then discussed from the vantage point of the customization of digital production that is enabled by new machines and the logic of the construction material itself. Technologically innovative procedures and manufacturing strategies are combined in order to explore and extend architectural enquiries. Nevertheless, the primary interests concern the exploration of different fabrication methods to deal with tolerances of raw and engineered material. On the other hand, they address studies on material enhancements and strip topologies applied in timber construction. The pavilions presented in the book demonstrate that wood is one of the most suitable materials to allow a full integration of the digital design-to-construction workflow for a seamless framework on an educational level.

Genoa, Italy
Guadalupe, Mexico

Andrea Quartara
Djordje Stanojevic

Acknowledgements

The presented case studies were developed within international academic groups from the Institute for Advanced Architecture of Catalonia (IAAC), the Architectural Association's Hooke Park Campus and the Centro de Estudios Superiores de Diseño de Monterrey (CEDIM). The full-size wooden structures are considered an extensible experiential learning framework, which acts as an interoperable procedure, bridging virtual and real.

For this, the authors would like to thank all the talented figures involved in the pavilions built in Barcelona: A. Markopoulou, for her inspiring and critical thoughts, A. Dubor for his clever tutoring and vast knowledge-sharing, and S. Brandi and M. Kuptsova for their work as coordinators (all: IAAC, Barcelona). Equally, the authors would like to express their gratitude to M. Seymour (Fab Lab Barcelona Manager) and R. Valbuena (Fab Lab Barcelona) for their suggestions during fabrication and A. Pistofidou (Fab Textiles Project Leader) for her insightful advice. The authors acknowledge the motivating project reviews during the Open Thesis Fabrication research by E. Ruiz-Geli. Projects at IAAC would not have been developed without the collaboration of Serradora Boix, Setmana de la fusta de Catalunya, Gremi de Fusters, Tallfusta, Incafust, Mecakim, Decustik, Windmill and Merefsa.

A special thank you goes to E. Vercruyse, the director of the Robotic Fabrications workshop, for his passion in sharing his in-depth experience of both traditional and digital craft; to G. Edwards (collaborator), P. Devadass (robotic developer), and Z. Mollica (collaborator) for their staunch effort in assisting the workshop; to Martin Self (Hooke Park director) for his striking dialogues, and to Charlie Corry-Wright for his essential help during assembly procedures (all: Hooke Park Campus, Architectural Association).

In addition, the authors would like to thank G. Kazlachev for collaborating in the theoretical conceptualization, computational design development and tutoring for the realization of the Woven Wood and Synthesis of Strip Pattern structures. The two prototypes have been realized during workshops promoted and organized by Noumena, hosted by Sbdio32, Nodo and IAAC. We are really thankful to have

been supported by the team from Karamba3D, who provided software licenses for the workshops. We wish to acknowledge R. Aguirre for his helpful advice with computational design approaches on these two projects. The authors would like to express their gratitude towards D. Durán Sánchez, Academic Director of the Architectural Department from the Centro de Estudios Superiores de Diseño de Monterrey (CEDIM) for supporting the research of the presented work over more than a year including The Laminate Pavilion and ongoing projects. Thanks to A. L. Scherer for proofreading the content.

Authors are grateful to all the tutors, researchers and students for the effort in working side by side (in alphabetical order): S. Akcicek, J. Alcover, S. Almorelli, E. Azadi, M. Bannwart, C. Bertossi, J. Blathwayt, G. Bruni Zani, P. Bussold, A. Carpenter, J. E. Castillo Neyra, Z. E. Cepeda Avila, B. Chavez, J. Curry, S. Cutajar, P. De Groeve, I. Di Stefano, L. E. Doster Arizmendi, I. Durán Vigil, M. Esquivel Garza, A. Figliola, D. Fiore, G. Galli, D. Garcia Pando, A. Giacomelli, A. Giglio, Y. Haddad, Ka. Kaewprasert, Ko. Kaewprasert, A. Kastorinis, M. Kumar, Y. Li, M. Magdy, S. Martinez Jiménez, F. M. Massetti, S. Meloni, C. Mendoza, A. Meza Murcia, M. M. Najafi, M. Orozco, G. Pernsilici, M. Pilon, S. Rademeyer, A. Revelles Elizondo, N. M. Rigal Delgado, E. Rodionov, E. Saccaperni, J. Sainz de Aja Curbelo, D. Saldivar Elizondo, I. F. Sandoval Reyes, F. S. Shakir, N. Shalaby, M. Sharp, Z. Sun, D. Tamez, C. Thompson, E. Triantafyllidou, S. Varani, E. Vasileska, M. A. Villarreal Muñoz, T. Wang, J. Won Jun, V. Winterle, A. Xristov, Y. Yang and E. Zanetti.

Last, but not least, our greatest loving gratitude goes to our relatives, for their continuous love and support.

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