



Matter Aggregation

A Design Studio at UVA

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- The book includes three essays from the authors to elaborate the essential ideas of rethinking architectural design and pedagogy in association with digital technology
- It also includes detailed materials of the studio teaching process and presents the design results as the proof of the concept
- The potential readers of this book are instructors and students who are interested in digital design and robotic fabrication in architecture

Within the human-machine collaborations cultivated in the digital age, crafts and materials are playing an increasingly important role in forming various ways of matter aggregation for architecture. Based on the pedagogical exploration of the design studio—Matter Aggregation at UVA, the book seeks new values of wood craft for contemporary architectural design, by introducing digital design and robotic fabrication techniques into the design process for timber building. The book integrates explorations of traditional crafts with digital fabrication technique, establishing a digital crafting as a new field for contemporary practice. The book explores the computational mechanisms and diagrammatic grammar within these craft-based aggregation systems, paying close attention to geometrical configurations, material effects and fabrication details and take advantage of these qualities to produce a unique spatiality.

Philip F. Yuan is a professor at the College of Architecture and Urban Planning (CAUP) at Tongji University, is visiting professor at Massachusetts Institute of Technology (MIT) and Thomas Jefferson Professor at the University of Virginia (UVA). His research mainly focuses on the fields of Post-human tectonics, robotic fabrication, and architectural design practices, promoting the application of digital design methodologies and fabrication theories in the discipline of architecture.

Lucia Phinney has been a lecturer at the University of Virginia since 1981, and a distinguished lecturer since 1996. Her work explores the means to reveal rather than erase the incredible potential for natural systems to effectively engage and inform the places we make.

Chao Yan is a post-doctoral researcher at Tongji University. He was a visiting lecturer at China Academy of Art, where he has taught design studio and theory courses from 2014 to 2018, and a visiting scholar at the University of Virginia in 2019.

