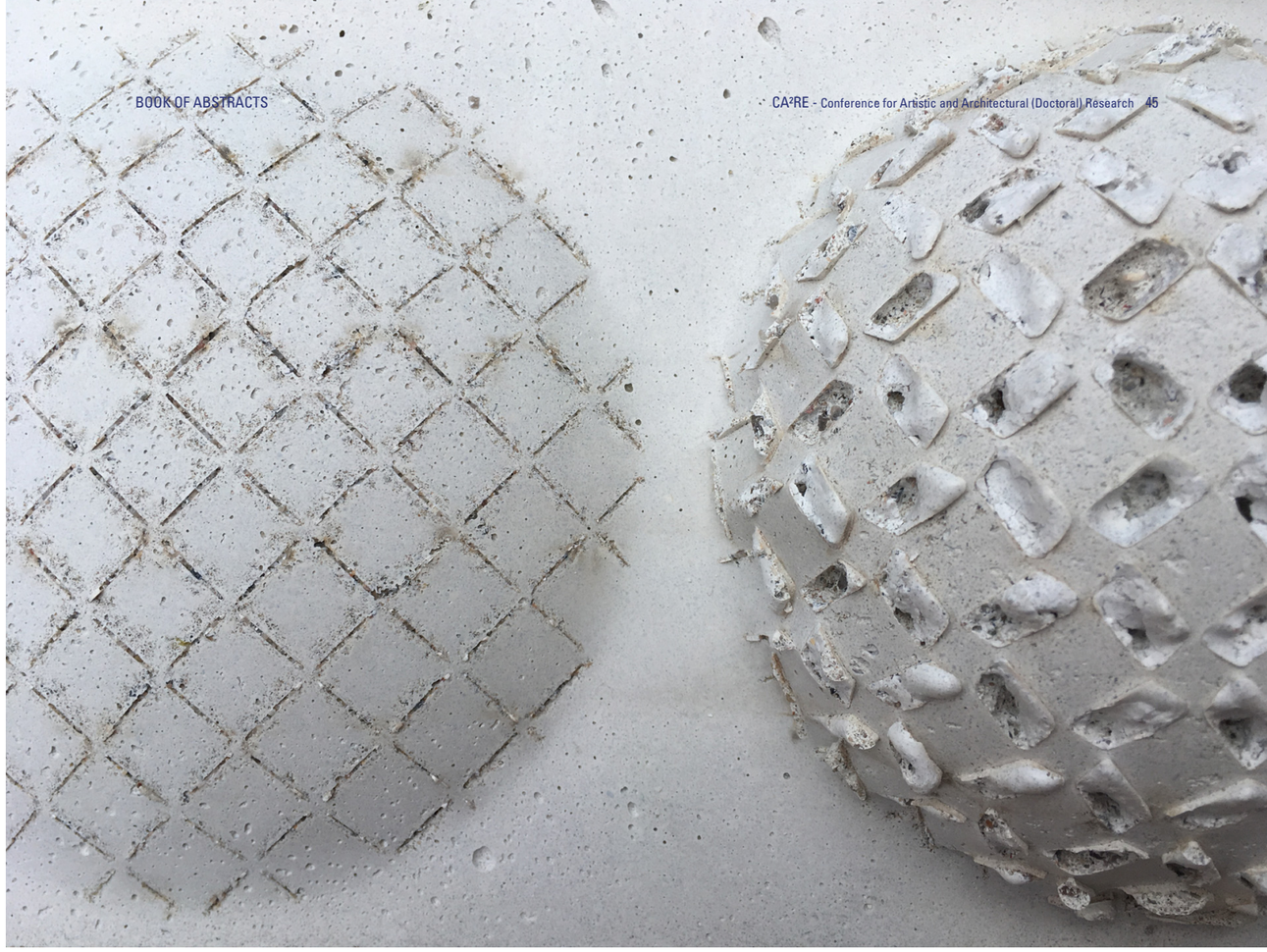
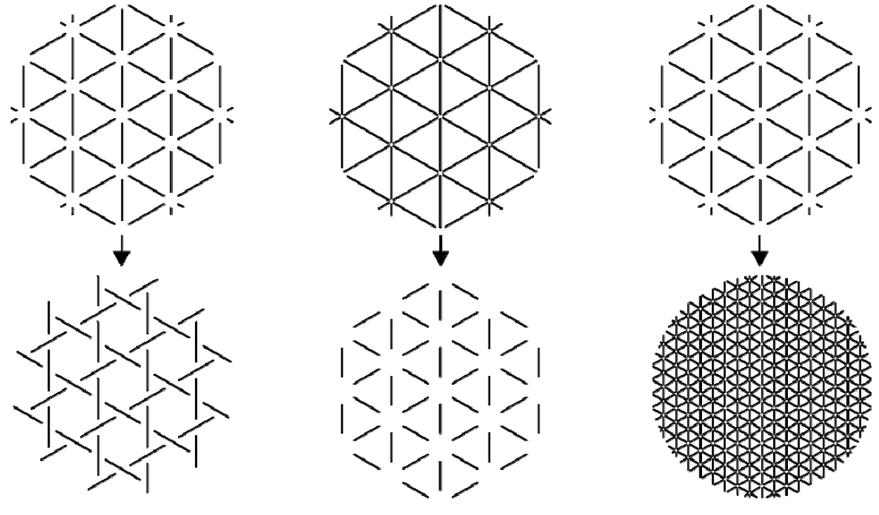
THE CRAFT OF UNPREDICTABILITY

JON ENGHOLT

Translation of design intent into built form plays a central role in architectural design, both historically and contemporary. Drawing and manufacturing software (CAD and CAM) maintains both an ability and an imperative to build with extreme levels of precision, control, and predictability. Most applications continue the lineage of traditional design processes focusing on representation and geometry rather than integration with material capacities. Some contemporary practices and research in material motivated computational design and fabrication seek to embed such capacities in strategies of material formation. Such a compound knowledge between geometry, fabrication, and assembly encapsulates Richard Sennett's hybrid notion of craft as not only knowledge about techniques, but also judgment in conceiving material processes. (Sennett, R., 2009. The Craftsman, 1 edition. ed. Yale University Press, New Haven.)

In this sense, computational tools hold a potential to relinquish control and predictability rather than enforcing it; material effects can inform a digital framework that encapsulates the complexity of the material behavior. Initial unpredictable physical effects serve as input for further cultivation in physical experiments and prediction through digital simulation - pursuing the internal logic of the building material rather than the formal logic of a design system.

The exhibition presents findings through digital fabrication experiments in concrete focusing on physical form from the material properties of concrete: The transition from fluid to solid form and the immense weight of the material. The experiments seek to demonstrate processes of designing conditions for how the material is shaped – and investigate how these conditions affect the physical cast.

Part of the formwork is made of rubber sheets with limited ability to stretch under pressure. This behavior is altered through digitally designed cut patterns, increasing the sheet's ability to stretch – allowing fluid concrete to pass through the cuts. The resulting form and surface is a negotiation between concrete and formwork – mediated through the cut patterns. The concrete casts are carefully designed and crafted to exhibit dual qualities: On one hand, unpredictability through a system of material manipulation and on the other, precisely controlled form in traditional solid formwork.