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## Preface

*Very slowly, over thousands of years, the ideal of the perfect machine was approached—that ideal which had once been a dream, then a distant prospect, and at last reality: No machine may contain any moving parts.*

Arthur C. Clarke, *The City and the Stars*, 1956, p. 161.

The content presented in this publication is an adapted version of my doctoral thesis that I completed at the Chair for Computer Aided Architectural Design, ETH Zurich, in early 2016. Working on my dissertation and on this book has been an exceptional, occasionally exhausting, but always an exciting journey. The knowledge that I gained on the field of *information materials* not only made me broaden my horizon and experience many previously undisclosed technologies, but especially introduced me to a myriad of fascinating individuals with whom I had the opportunity to exchange or collaborate, each of them mentioned in the *Credits* section at the end of this book.

My interest in this field began in 2009, when working at the office of Philip Beesley in Toronto, Canada. Employing shape-memory alloys for the actuation of his ‘Breathing Pores,’ made me wonder about the fascinating, very particular behavior of these dynamic materials, which perform in absolute silence not requiring anything but electricity. The thin wires, which are miraculously able to contract when heated, embedded in the untold beauty of Beesley’s extraterrestrial installations, propelled me to question my experience in mechanical systems and convinced me that there had to be a softer, more organic side to mechanics and especially architecture.

After returning to Europe, from Canada, I had the privilege to receive a teaching and research position at Ludger Hovestadt’s Chair for Computer Aided Architectural Design, ETH Zurich, in early 2010. Once again I was blown away, this time not by a certain materiality, but rather by the immense powers of information technology and their architectural application. The work that is conducted at the Chair in terms of programming, computation, and fabrication, and the people who do so, is outstanding and can hardly be compared to anything else I have seen since. Operating in such a vibrant environment had been a continuous inspiration and challenge and allowed me not only to discover and understand the possibilities of code and algorithms but also to freely develop my own agenda.

When commencing my dissertation in late 2011, my aim was to merge and unite these two experiences, the physical world of smart materials and

the immaterial world of computers, which I refer to as *information materials*. A crucial part of this effort involved in extending my scope beyond the domain of architecture and making me delve into the areas of engineering, materials science, or even biology, disciplines of which I only had the faintest knowledge, but each provided a plethora of inspirations and opportunities for creative design.

Now, roughly 6 years later, I am more than convinced by the immense possibilities of employing *information materials* into architecture and design for the creation of adaptive buildings, spaces, products, and experiences. Yet evermore I am continuously fascinated by new ways of working, fostered through cross-disciplinary exchange and collaboration, driven by optimistic curiosity, and encouraged through models of openness and sharing. With such prospects, I am highly looking forward to continuing this work in the years to follow.

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