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● Nicholas Negroponte

# Architectural Intelligence

● Cedric Price

● Richard Saul Wurman

How Designers and Architects  
Created the Digital Landscape

Molly Wright Steenson



## architecture/design

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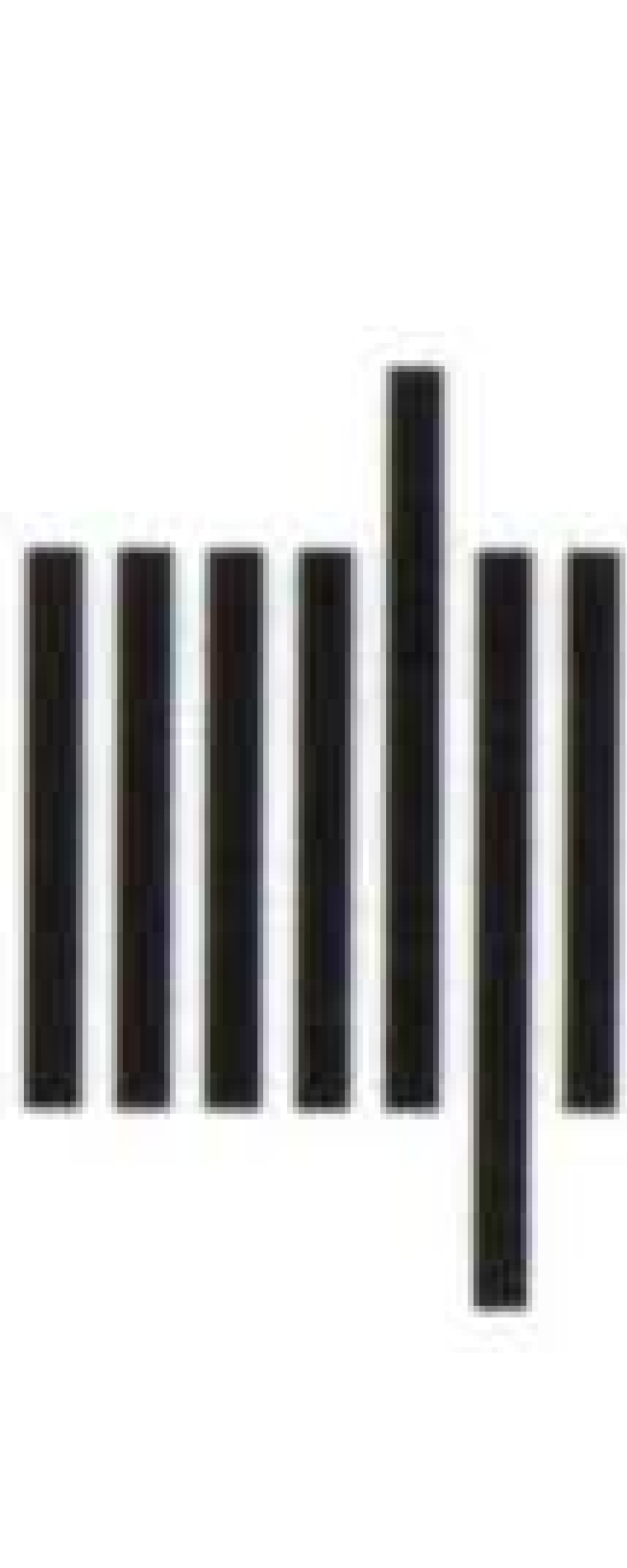
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# Molly Wright Steenson Architect Intelligence



# **Architectural Intelligence**

**How Designers and Architects Created the Digital Landscape**

**Molly Wright Steenson**

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## Architectural Intelligence



To Simon and our tiny family





## Acknowledgments

This book is a map of the questions that won't leave me alone. Maybe that's what all books are. But it's also a diagram of people—of people who helped bring it into being, and there are people (and places) I'd like to thank.

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# 1 Architects, Anti-Architects, and Architecting

What is the verb of “architecture”? That depends on who you ask.

A professional architect will tell you that architects *design*. Architects design buildings. They might have a hand in building them, but first and foremost, they design them. Yet the verb of digital structure for programmers and information architects designers is “architecting”: designing a system, working holistically from parts to wholes, operating from above, setting in place foundations from below. From the perspective of digital designers and programmers, what architects do is analogous to what designers and programmers do in their most complicated and intricate work. The way designers and programmers use the term speaks to the idea of what an architect does, to the complexity of their work, and to the expertise that architects claim. In essence, they architect architectures.

Many architects criticize the uptake of architecture and architecting by non-architects. Becoming a licensed architect is a professional distinction achieved after several years of apprenticeship and a long set of challenging exams that takes months, if not years, to complete. Only after passing the registration exam can the designer of buildings call herself an architect. Once licensed and registered, architects can sign off on plans and drawings, legally assuming risk for projects.

It is illegal to call oneself an architect without the title, as Nathan Shedroff, founder of the early web design firm vivid studios, discovered in 1999 when he received a letter from the Board of Architectural Examiners. Shedroff (whom we’ll meet again in chapter 4) wrote a column titled “The Architect” for a magazine about designing for the World Wide Web.

Dear Mr. Shedroff:

The Board has received information that you may be offering architectural services. Specifically, the Board received a copy [of] your article title “THE ARCHITECT” featured in New Media Magazine. In addition, your email address was identified as architect@newmedia.com.

Be advised that if you do not have a California license to practice architecture, you may be in violation of the Architects Practice Act, Business and Professions Code section 5536. This section states, in part, that it is a misdemeanor punishable by a fine and/or imprisonment for any person who is not a California licensed architect to put out any card, sign, or other device which might indicate to the public that he or she is an architect or is qualified to engage in the practice of architecture.<sup>1</sup>

Shedroff wasn't passing himself off as an architect in the traditional sense, but as amusing as the letter is, it underscores something important: that architecture is a high-stakes matter. It is a title and practice that architects defend, and a metaphor that the designers of systems reach for when they are working on complex problems and digital structures.

Architecture structures and scaffolds complex entities. It is no surprise that engineers, computer scientists, and digital designers reach out to architectural concepts when they want to express the complexity of their work. The notion of architecture provides a means for relating elements of a problem that are at different scales to one another. When non-architects adopt the term "architecture," when they use "architect" as a verb, they are seeking ways to bring complicated issues into relation with each other. They are looking to architecture as a metaphor for how humans interact with spaces. These notions of architecture and architecting are closer to each other than it might seem.

The purpose of this book is to explore that space between architecture and architecting. It centers on the work and practices of four architects: Christopher Alexander, Richard Saul Wurman, Cedric Price, and Nicholas Negroponte and the MIT Architecture Machine Group, starting in the 1960s and focusing on their work from the 1960s to the 1980s. In each case study, I look at the technological paradigms that each incorporated in their work, such as cybernetics, artificial intelligence, and the programs and interfaces that they used and developed. I then trace the influence of these architects on digital practices such as programming languages, information architecture, and other contemporary digital design practices from the late 1980s till the present day. I ask: In what ways were these practices architectural, and how did they push the boundaries of architecture? Similarly, how did their experiments with computing and technology push the bounds of the technological fields in which they were working? What did computational, cybernetic, and artificial intelligence researchers and engineers stand to gain by engaging with architects and architectural problems? How did architecture become useful territory for the imagination of new digital worlds?

At the same time the digital world was reaching toward architecture and architectural metaphors, the architects in this book weren't always sure whether what they were