



The Metabolism of Settlement Coexistences

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- Offers a cradle-to-grave account of how human settlements transform and affect their environment
- Addresses the need to develop quantitative methods to determine how human settlements fare environmentally
- Provides policy makers, investors and the general public with real tools to understand how human settlements affect our environment through the transformation of matter
- Visualises the way buildings, communities and cities metabolize material flows such as water, energy and organic materials
- Offers a methodological field guide on how to apply metabolic analysis to human settlements
- Presents the first application of stock flow modeling to the study of urban settlements from dense cities, suburban settlements to informal communities

With the onset of the Anthropocene Era, concern for the metabolism of various kinds of settlement has risen appreciably. Of particular concern in the study of architecture and urban design are metabolic contributions of flows of stocks that go into the construction and operation of settlements of one kind or another. This book is about a methodological approach that allows urban settlement patterns to be re-written, as it were, into water, energy and other material flows emanating from original sources in the geosphere, biosphere, hydrosphere, and so on, through various stages of transformation during settlement construction and operation and then on to end-of-life activities. In short, the methodology produces a so-called 'cradle-to-grave' account of the material aspects of urban settlement from which technological and design proposals can be crafted ameliorating and diminishing adverse impacts, as well as related outcomes such as embodied energy and carbon concentrations so deleterious to climate change and proliferation of other hyperobjects.

Carlos Arnaiz is an architect, educator, writer and urban design consultant. He is the founder and principal of CAZA, the co-founder of SURBA and an Adjunct Assistant Professor at the Graduate School of Architecture & Urban Design at Pratt Institute. Prior to founding CAZA, Carlos was an associate partner at SAA in charge of over 20 global projects. Carlos started his career working as a design associate at a number of world-renowned architecture firms such as Office dA and Field Operations. **Peter G. Rowe** is the Co-Founder and Chairman of SURBA: Studio for Urban Analysis. He is also the Raymond Garbe Professor of Architecture and Urban Design at Harvard University and a Harvard University Distinguished Service Professor. He served as Dean of the Graduate School of Design at Harvard from 1992 to 2004, and was Chairman of the Urban Planning and Design Department there from 1988 until 1992, and Director of the Urban Design Programs from 1985 until 1990. Prior to Harvard, Rowe served as the Director of the School of Architecture at Rice University from 1981 to 1985 and also directed many multi-disciplinary research projects through the Rice Center, where he was Vice President from 1978 onward, and at the Southwest Center for Urban Research. He has also served several other cultural and academic institutions, including the Center for Canadian Architecture, the Aga Khan Trust for Culture, and the Cities Programme of the London School of Economics, as well as holding several honorary professorships in China, as well as in Taiwan and Hong Kong. Currently, he is also a High-Level Foreign Expert and Guest Professor at Tsinghua University in Beijing. Rowe's research and consulting are extensive and international in scope, including subjects dealing with matters of cultural interpretations and design, as well as urban formation in relationship to issues of economic development, housing provision, resource sustainability, and historic conservation. A recognised critic and lecturer in the field of architecture and urban design, in addition to numerous articles, Rowe is the author, co-author, or editor of 30 books. **Claire Doussard** is a landscape engineer, urban designer and doctor of planning. She is a specialist in sustainable urban planning and urban environmental and technological innovations. She holds a Doctor of Philosophy from Ecole Spéciale d'Architecture. Other contributors: Yona Chun, Yun Fu, Rolando Girodengo, Boya Guo, Trinity Kao, Priyanka Kar, Elyjana Roach.