

Optimizing Building Performance,  
Tenant Satisfaction,  
and Financial Return

# retrofitting

OFFICE BUILDINGS  
to Be GREEN and Energy-Efficient



Urban Land  
Institute

# Preface

**This book was written** with a simple intent: to offer a broad audience a clear and authoritative guide to the retrofitting of office buildings to be green and energy-efficient. To this end, office retrofits have been discussed from numerous perspectives, including architecture, engineering, interior design, feasibility and facilities planning, construction, finance, leasing, and operation. As well, this volume includes chapters on the policy implications of green and energy-efficient office retrofits, and their pivotal role in shaping international strategies on economic stimulus and climate change.

As a long-time commercial real estate investment manager, sustainable real estate adviser, and asset manager, I am keenly aware of the breadth and depth of experience needed to bring a green retrofit or renovation project to market. Thus, this book was written to be useful not only to the owners and developers of office space but also to diverse members of the commercial real estate community, including architects, engineers, contractors, interior designers, investment and finance professionals, attorneys, and those engaged in property operations, leasing, acquisitions, and sales. Equally important, this volume is intended as an accessible guide for policy makers and members of the public who want to know how an ordinary office building can be made energy-efficient and green. My co-authors and I will have fulfilled our hopes for the book if readers come away with a clear understanding of the features that can be incorporated into a green office building and how a successful energy-efficient retrofit can be accomplished.

This project drew on the talents of many accomplished professionals in the commercial real estate and energy efficiency sectors, who gave generously of their time and experience to develop material for this book. Readers will meet them in these pages. Equally important are the peer reviewers, who offered unstintingly of their insight and

expertise to improve earlier versions of the manuscript and who are acknowledged on page viii. My profound thanks to all of these colleagues, without whom this book would not have been possible.

Others in the commercial real estate and energy efficiency sectors who made important contributions to the finished product are Jack Armstrong and Kent Stumpe of BASF; Christopher Arnaoutelis, Susan MacLaurin, Pascale Roy, and Ian Stewart of GWL Realty Advisors; Phil Bernstein of Autodesk; John Christmas of Hannon Armstrong; LaRee DeFreece of HOK; Benjamin J.M. Dutton of Faithful+Gould; Shannon Eckhart, Michael Deane, and Christopher McFadden of Turner Construction; Stacey Eddington of Transwestern; Patrice Frey of the National Trust for Historic Preservation; Sarah Friedman and Peter Miscovich of Jones Lang LaSalle; Frederick Fucci of Arnold & Porter; Steve Gossett, Jr., of Transcend Equity; Holger Hagge and Robert Schaeublin of Deutsche Bank; Meyer Harrell of Weber Thompson; Bill LaPatra of Mithun; Ron King of the National Insulation Association; Terry McCormick of EHDD Architects; Hal Myers and Sally Wilson of CB Richard Ellis; Judi Palmer of A&R Edelman; Dick Pearson of Pearson Engineering; Allan Ross of the Christman Companies; Andrea Simpson of Boston Properties; and Bob Spreat of Tremco Roofing.

This project originated at the Urban Land Institute and was brought to completion by its extraordinary staff. Rachelle Levitt conceived of, initiated, and championed the book, including its international dimensions. Dean Schwanke was an adept steward of the project. Uwe Brandes offered helpful perspectives on the case studies. The manuscript was shaped and edited under the expert guidance of Anita Kramer, who is always thoughtful, insightful, and judicious in her comments. Copyediting was performed by Lise Lingo of Publications Professionals LLC, under the direction of James Mulligan. The design and graphics, by John Hall of John Hall Design Group, took shape under the artful guidance of Betsy VanBuskirk. Karrie Underwood offered organizational support.

My gifted colleagues at Malachite LLC provided ongoing insights across the numerous dimensions of green and energy efficient real estate. Thanks to Martha Paschal for her

important and timely observations on the real estate capital markets and related governmental programs and to Nick Katz for his expertise on emerging energy efficiency initiatives and their implications for real estate owners and developers. From inception to completion, Malachite's George Vavaroutsos has been a key partner and a valued contributing author on this project. George's acumen in the areas of green and energy-efficient design, engineering, and project management has been indispensable in researching and writing this book.

On a personal note, my mother, Janet Aronson, and my father-in-law, Leon Tobias, have been sources of unflagging interest and enthusiasm during the development and completion of this book, as has Goldie Wiesner. I would especially like to thank my husband, Jeff Tobias, for his steadfast encouragement and support.

**LEANNE TOBIAS**

