



Why, How, Who, and What

Sustainability does not fit nicely under a single heading; it does not belong to a specific academic discipline or school subject. Nor is it the domain of any one sector—environment, education, business, or government. The quest to increase global sustainability involves many aspects of culture and a variety of disciplines that affect the world’s ecology, economics, ethics, and education. Sustainability is an issue beyond a given lifetime or location. It is everybody’s business and involves all aspects of how one lives in the modern world.

WHY USE THIS BOOK

This text is a basic primer focused on the design process for the sustainable built environment.

Buildings that are sustainably constructed and maintained contribute to the repair of the global ecosystem throughout their entire life cycle, while protecting the health and increasing the productivity of building occupants. The design of sustainable buildings requires that the architectural design process evolve into a new framework that promotes a transformation of the built environment globally. This framework must address the local context and apply to the full life cycle of the building.

Sustainable buildings are resilient buildings, mitigating damage to the environment and capable of adaptation. They are designed for longevity with low embodied energy requirements. Resilience requires a holistic approach to sustainability that extends to both lifestyle and the community beyond the buildings themselves.

Sustainable Design Basics presents design strategies that leverage renewable natural resources and innovative construction techniques to incorporate systems that conserve energy and resources. However, this book is more than a collection of sustainable strategies. *Sustainable Design Basics* is a methodology.

HOW TO USE THIS BOOK

This text is an instructional tool that presents both basic technical information and sustainability strategies required for sustainability, and a methodology to facilitate the collection, analysis, and evaluation required to approach a sustainable building project.

Sustainable design is inherently a complicated process. It requires an understanding of influencing factors far beyond client preferences, program requirements, and construction methods. For the architect or designer first approaching sustainable building design, it can be overwhelming.

For this reason, *Sustainable Design Basics* (SDB) has simplified the process to its most basic design steps. SDB introduces a step-by-step methodology with a series of matrices and worksheets as decision-making tools, as well as a demonstration project that illustrates each step. The SDB methodology is a working tool intended for use in the design process, not merely a text to be read for information. While an individual learner may use the SDB methodology, it was conceived and is intended for use in a conventional studio classroom setting.

WHO SHOULD USE THIS BOOK

As a basics book, in the tradition of *Space Planning Basics* by Mark Karlen and Rob Fleming and *Lighting Design Basics* by Mark Karlen, Christina Spangler, and James R. Benya, *Sustainable Design Basics* is directed primarily to intermediate-level (sophomore or junior levels in a baccalaureate or first professional degree program) interior architecture, interior design, and architecture students. These previous “Basics” books are the inspiration for a precise, easily accessible methodology to address sustainable design. However, this particular subject matter asks a lot of the reader. Sustainable design is a far-reaching subject that touches every aspect of design and deals with a wide range of design variables. It is a challenging subject. In breaking down the topic to address basics, a few readers may find some topics too simple and other topics too complicated. Hopefully, the bulk of the text addresses the subject material with an easily accessible, informative, and applicable approach.

One of the critical aspects of sustainability is the interrelated nature of global society. That is true for the environment, marketplaces, and education. Readers may come to this text from all parts of the world. With that understanding, the language of this book is direct and straightforward. Complex matters are broken down to smaller basic concepts to avoid, where possible, multilayered, complex theory. The authors are based in the United States, yet the sustainable design principles and practices in this book have global application. Locations in the United States may dominate the examples and exercises, but the choice of specific site locations was a result of limited time to address an ambitious scope of challenging material and not an effort to exclude other people or countries.

WHAT ARE THE PARAMETERS OF THIS BOOK

The primary focus of *Sustainable Design Basics* is design, not technology nor terminology. Specifically, the focus is limited to interior architecture, interior design, and architecture. The methodology described applies to both new construction and

to renovation of existing buildings. For clarity, this text limits the number of variables with a focus on new construction variables, although renovation and building reuse are vital elements of a sustainable built environment. However, each existing building has unique characteristics of construction, materials, and existing systems, beyond what a basics text can competently address.

A site for a building is a complex and worthy topic for sustainable design exploration. Limited by time and textbook length, in-depth exploration of the landscape and the complexities and challenges presented to sustainable designers are beyond the scope of this book.

ORGANIZATION

Sustainable Design Basics is a step by step, how-to methodology. Sadly, books are by default linear. There is not a “spiraling” option for information in print. While the text flows in a direct linear sequence of information, understand that sustainable design is not a linear process. The sustainable design process is integrated and iterative, frequently looping back to revisit preceding design decisions.

EXERCISES

The concepts and strategies included in this text have direct application to interior design, interior architecture, and architecture. The exercises that accompany the text follow the step-by-step methodology allowing the reader to do work independently to develop sustainable design skills through project-based learning. A set of undeveloped sites and building “shells” in a variety of geographic locations in the United States provided for exercise project locations each have different geological, climatic, and cultural contexts. Completing assignments on different sites allows the exploration of the sense of “place” as a fundamental design influence, inspiring different design ideas. A variety of clients, users, and contexts ranging from rural to urban are provided as exercise variables. The study of hundreds of projects is possible by mixing and matching exercise variables. Projects can be explored in the studio classroom setting or independently.

Users of this text are expected to possess basic knowledge of design, drafting, and planning skills. Many of the exercises require the ability to open and print AutoCAD files or to download and print PDF files. Some of the exercises in Chapter 15 require software. There are also exercises that can be completed, with some variation, without software. Additional software information is available in the appendix and the companion website.

COMPANION WEBSITE

A companion website to this book (www.wiley.com/go/jaffesustainable) has a variety of tools, matrices, templates, SketchUp, and AutoCAD files not found in the printed text, as well as:

- PowerPoint files with simple slides that review the materials addressed in the book
- Narrated videos that review and augment concepts presented in the text
- Simulation and validation assignments which require energy modeling software

