Chapter

INTRODUCTION: How to Use This Book

This book is an instructional tool designed to develop the necessary knowledge and skills for solving lighting design problems for typical rooms and spaces and for collaborating with lighting design professionals in developing solutions for complex rooms and spaces. The book is directed to students and professionals in architecture and interior design or in related fields, such as facilities management, construction management, store planning, and electrical contracting and engineering.

The primary focus is on design, not technology or terminology. Design is the development of a lighting design concept and the selection and placement of luminaires to provide optimal lighting and aesthetically satisfying spaces for the visual tasks at hand. Lighting technology (and related terminology) is covered in enough depth to serve the design orientation of the book's methodologies. For more information related to these technical factors, the list of recommended readings (p. 251) identifies the best sources.

This is a how-to instructional textbook, the goal of which is to provide its users with the tools required to function effectively in the many design and construction fields of which lighting is an essential part.

ORGANIZATION

Lighting Design Basics is organized into four parts:

Part I: Basics about Lighting. Chapters 2 through 9 provide background for the technical (and related terminology) aspects of lighting design, enough to serve this book's purpose but without unnecessary emphasis on technical issues. More specifically, the technical factors addressed are light sources (and their color implications), luminaires, switching and controls, daylighting, and calculations (including rule-of-thumb techniques).

Part II: Design Process. Chapters 10 and 11 provide a basic approach or methodology for developing successful lighting design concepts and solutions, including the graphic representation tools and techniques used to convey the solutions. In this context, success is defined as meeting functional visual requirements, achieving satisfying aesthetic results, and using lighting design technology (including code compliance) intelligently. To aid in this process, a lighting design criteria matrix has been included as a predesign tool.

Part III: Applications and Case Studies. Chapters 12 through 19 focus on the typical lighting design problems encountered in the major building use types: (1) residential, (2) office/corporate, (3) health care, (4) educational, (5) retail, and (6) hospitality. In addition, Chapter 18 provides case studies for commonly used spaces, such as restrooms, corridors, and airport waiting areas; Chapter 19 addresses the issues of exterior lighting; and Chapter 20 deals with

the recurring questions related to retrofitting existing conditions. Case studies are provided for many of the typical rooms and spaces found in conventional buildings. Design problems, their solutions, and the rationales for the solutions are presented in detail.

Part IV: Professional Skills. Chapter 21 provides additional and necessary information about functioning as a designer or design-related professional in matters concerning lighting design. This information is intended to serve as a transition from learning to professional practice.

Several chapters have additional technical and construction-related information in boxed notes called "Electrician's Notebook." These notes will be of specific interest to readers who wish to investigate these areas in more depth.

The volume also includes two appendixes. Appendix A is a discussion of energy codes and how they affect design. Included are the Internet reference for obtaining the most recent energy code information for the United States. Appendix B is a basic summary about how lighting can contribute to achieving LEED certification.

GETTING THE MOST OUT OF THIS BOOK

The information in this book is meant to be applied, not just read. At the heart of the learning process presented here is putting newly acquired knowledge to work shortly after reading and understanding the related case studies.

The examples in the case studies represent typical lighting design applications. Beyond these examples, lighting design becomes increasingly complex and challenging, even for the most knowledgeable and experienced professionals. The purpose here is not to prepare the reader for those complex problems but rather to provide the reader with an understanding of lighting design concepts, techniques, and realistic goals so collaboration with a lighting design professional can achieve the best possible results. The reader must learn to communicate design intentions in a way that a lighting designer can use. Those communication skills require a conceptual understanding of lighting design, the acquisition of which should be one of the major learning goals in working with this book.

Many technical aspects of lighting design go considerably beyond the scope of this book. Issues such as the fine points of color rendition, code compliance, project budget, and lighting live performance spaces can be extremely complex. Working knowledge of these factors is not expected of broad-based design and built environment professionals. However, general familiarity is required to collaborate productively with lighting designers. To acquire deeper knowledge in these more technical matters, consult the bibliography.

In a classroom setting, the value of this book is enhanced by an exchange of ideas among students working on the same lighting design assignments, the instructor's critiques, and open classroom critiques and discussion. Beyond the classroom, the reader should take advantage of every opportunity to discuss lighting design solutions with design professionals, particularly those with extensive practical experience. Such discussion can be invaluable.

Two readily available learning tools should be used concurrently with this book. First is the deliberate observation and critique of existing lighting design applications. The reader should be aware of the lighting in public and semipublic spaces, making note of lamp and luminaire types and, more important, what works well and what does not. A great deal can be learned from the successes and failures of others. Second, many architecture and interior design professional publications present enough programmatic, plan, and spatial information about interesting spaces to use as design exercises for enhancing skills.

It all begins with working on paper or the computer and trying a variety of lighting design solutions to typical design problems.

Although this book prescribes a particular approach to solving lighting design problems, it should be understood that several potentially successful methodologies exist. In the professional community of lighting designers and the other design professionals who work with them, the problem-solving process enjoys many workable variations. It is expected that individual professionals, after repeated experience with actual problems, will develop personalized methodologies