

THIRD EDITION

DESIGNING INTERIORS

ROSEMARY KILMER ■ W. OTIE KILMER



WILEY

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Third Edition

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WILEY

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*To all the students, instructors, and professionals, who are inspired by
the creative processes of interior design.*

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Preface

Interior design is an exciting and engaging profession. The responsibilities of an interior designer encompass most spaces, components, and elements within environments built for human needs and aspirations. The education of the professional interior designer aims for a high level of creativity, knowledge, and skill in designing for our increasingly complex and technological society. Interior designers are also actively responsive to issues that concern our societies, people, cultures, and this planet. These professionals have a commitment to conserving energy, reducing pollution, preventing global warming, and recycling our resources. They support the preservation of endangered life and plant forms as well as cultures and buildings. Interior designers try to understand the interrelationships of local and global factors and to make positive design decisions at both the macro and the micro levels. Above all, the interior designer is cognizant of human behavior and needs, cultural differences, and the contextual links necessary for responsive and responsible environments.

It has been many years since we wrote the first edition of *Designing Interiors*. The intent of the first edition was to provide a strong introduction and understanding of the process of designing interiors from the conceptual ideas to the final implementation. At the time it was first published, it was one of the few books on the market that included this process for both residential and commercial designs.

The second edition of *Designing Interiors* followed a similar format and organization to the first edition. The second edition included updated information and incorporated how interior design is taught and practiced today. It included an emphasis on issues such as sustainability, universal design, practicing in a global society, and respecting social values.

In this third edition of *Designing Interiors*, we have added a great deal of new information, illustrations, and photographs to reinforce current design and construction methods, materials, and practices. Some of the materials we presented 20 years ago still remain relevant today and are updated in this edition. This encompasses our commitment to the planet, people, and natural resources we sought to emphasize back then.

This book is intended to serve as a comprehensive overview of the basic knowledge required for the education of the professional interior designer. As the field of interior design becomes an increasingly regulated and licensed profession, education and practice will continue to emphasize a solid expertise in designing for people, their environments, and a better quality of life for all. Complex technical knowledge and creativity are required to design and implement environments while also protecting the health, safety, and welfare of the public. The book incorporates materials essential to the preparation of a designer who has a holistic view and is capable of communicating and working with other professionals as a team to help create successful and responsive interior spaces.

Interior design is presented in this book as an integrated process applicable to both residential and nonresidential (commercial) interiors. Although interior designers and some colleges might focus on one or the other of these, the design of residential interior environments and the design of commercial interior environments are presented herein as similar processes with similar concerns. Although each area has special considerations, the education of interior design students must have a foundation applicable to both.

This book is intended to be used primarily as an introduction to interior design at the college level. However, the book could easily be used in subsequent studio courses that go beyond an introduction. As beginning interior design courses can vary in their content, breadth of coverage, and approach, some parts of the book may not be applicable for a single course or for a particular instructor's teaching subjects and methods. Some chapters or sections might be bypassed or rearranged according to an instructor's preferences. Some of the technical matter might be saved for use in upper-level courses. However, the book can serve as an introduction to those topics and as a comprehensive reference for interior design students throughout their education.

This book is organized into six parts consisting of related chapters. Content is introduced at basic conceptual levels and applied to the practice of interior design; then, more complex information is added. This structure parallels the education and practice of interior designers from initial problem awareness and definition to incorporating various materials and building systems to create interior spaces.

Photographs and other illustrations have been updated and carefully chosen to reinforce ideas within the text. These images enhance the reader's appreciation and understanding of the principles and relationships of interior spaces.

Each chapter ends with an activities list for incorporating into classroom discussion and projects.

“PART ONE: INTRODUCTION TO THE INTERIOR DESIGN PROFESSION AND THE HISTORICAL AND THEORETICAL BASIS OF DESIGN” introduces the reader to the field of interior design, discussing the foundations of design from early to modern times. The relationship of interior design to society and built environments is defined and explored. This third edition includes information about current design issues that have affected the interior design profession, such as universal design, globalization, sustainable design and green certification programs, and technological advances. The pandemic of 2019 also showed how interior design and other professions were impacted and created new challenges for the practice today. Updated information on professional organizations related to the practice of interior design, academic preparation, and licensing and/or registration laws that affect an interior designer has also been expanded. An overview of design history helps the beginning student understand the influences that created a particular solution or style. These insights provide the student with a contextual sense in design purpose, drawing from the past to understand tomorrow. There is also the need for students to be aware of global design influences. The timeless elements and principles of design are defined and applied in making functional and aesthetic decisions about the conception and construction of interior spaces. Color and light are examined as interrelated concepts affecting our perceptions of our surroundings.

“PART TWO: PLANNING RESIDENTIAL AND COMMERCIAL SPACES” provides an in-depth look at the active, creative processes interior designers use to identify, organize, analyze, and solve problems in the built environment. Various sequences describe how designers achieve effective and unique solutions. Programming is detailed as a method for defining user needs and activities, researching and evaluating facts, and arriving at specific parameters for the interior design. Updated information on evidence-based design research has been expanded. Space planning is presented with more examples and applications and expanded to include a variety of additional facilities that an interior designer is involved with today.

“PART THREE: THE EXTERIOR AND INTERIOR ENVIRONMENTS” encompasses the relationships and influences of the exterior and interior environments. Updated information on current concerns for energy conservation and efficiency, historical preservation/restoration, regulatory codes, design for the physically impaired, and other issues are discussed in relation to interior design. Environmental issues and technical systems, such as renewable energy sources and applications, that support and control interior spaces are defined and described as integral parts of the interior designer’s practice. Designing with daylight and new artificial light sources has been updated in this third edition. Coordination with other design professionals as an integrated partnership or part of the team needed to construct buildings and interior spaces is discussed and updated.

“PART FOUR: INTERIOR MATERIALS, ARCHITECTURAL SYSTEMS, FINISHES, AND COMPONENTS” examines materials used for constructing and finishing interior spaces, as well as how these materials and assembly methods generate forms and serve as integral components for creating interior environments. This third edition reflects more on the social, cultural, global, and environmental responsibilities of interior designers. It emphasizes the impact that interior designers have on the sustainability of our natural resources and how to be more responsible in their choices of materials, systems, finishes, and products. This edition also includes many new materials and products that were not available since its previous edition.

“PART FIVE: FURNITURE, FURNISHINGS, AND EQUIPMENT” includes a discussion of “accessories” as an integrated part of the furniture, furnishings, and equipment (FF&E) package that interior designers work with. FF&E items are planned for in the beginning of a project and refined to their specific function throughout the design process. This third edition provides a better understanding of how FF&E is incorporated into interior environments through more photographs and illustrations of their application.

“PART SIX: ASPECTS OF PROFESSIONAL PRACTICE” focuses on the professional practice and the designer’s methods of communication (drawings, photographs, models, oral/written presentations, digital media, etc.). A business sense is essential for successful designers. Basic practices and business operations are discussed to help the student understand and appreciate the variety and comprehensive practices of interior design before entering the profession. This third edition also features the interior design profession’s use of technological tools for designing today’s and tomorrow’s interiors.

In conclusion, we are passionate about the interior design profession as it is an exciting, but complex, profession that demands more responsibility to issues that concern our societies, our people, and our planet. To be an interior designer is more complicated than in past years; however, the rewards are more satisfying due to the abundance of new materials, products, methods, interactions with other people, etc., that create an aesthetic and responsive environment that is gratifying, supportive, and responsive to the user of the space. The authors truly hope this book creates an interest and passion for learning about interior design and the practice of it.

Acknowledgments

Writing a third edition of a book is much like writing the first two, especially after so many years, where the dynamic professions of interior design and architecture have experienced advancing global, technology, and environmental concerns. To keep abreast of the issues and best practice standards facing the interior design profession, we thank the many individuals and organizations for their invaluable help in shaping this third edition. Their contributions of ideas, criticisms, photographs, and other illustrative materials have made this new edition possible. Our goal was to update this textbook to provide a substantive foundation for learning about the scope of interior design (conception to occupancy), set a professional standard, and express the social awareness of designing interiors for all people.

Without the help and encouragement of many special people, we could never have completed a book of this magnitude and complexity. Although we cannot list the numerous individuals and their contributions, we express our sincere thanks here to many. Special appreciation goes to the many interior designers, architects, and photographers who have provided illustrations, photographs, and permission to use their materials to make this book a truly visual experience. We are especially thankful to Allsteel; Perkins+Will; Herman Miller, Inc.; Haworth, Inc.; Kohler; Knoll, Inc.; Kimball Office; Steelcase; National Kitchen and Bath Association (NKBA); EnviroMed Design Group; and Andersen Windows.

Every effort has been made to correctly supply the proper credit information identifying interior designers, architects, photographers, and their projects. We apologize for any errors or omissions that may have occurred in these credits, if any.

We are grateful to a number of interior design educators throughout the country for their reviews, criticism, and helpful suggestions as to the needs of the students and instructors in interior design. We thank Lisa VanZee for her contributions and illustrations to the book. Special thanks to Jeff Johnston for some of his materials and line art. And, of course, many thanks to Courtney Johnston of Perkins+Will for her insights and contributions.

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Finally, we express our deep appreciation for the continual support of our family and friends through this rewarding project.

Rosemary and Otie Kilmer

About the Companion Website

This book is accompanied by the following companion website:

www.wiley.com/go/kilmer/designinginteriors3e



This website includes:

- Instructor Manual
- Answers to All Exams
- Powerpoint slides of Chapters

Interior Design: an Introduction

1

Interior design is one of the most exciting and creative professions. A combination of art, science, and technology, interior design, in practice, manipulates space, form, texture, color, and light to enhance the quality of human life. This book is about interior spaces and their design and interior design as a profession. The practice of actively designing interior space is a major commitment by those who enter the field, that is, people who work toward improving our built environments.

We spend an increasing amount of our lives indoors in built environments. We wake from a night's sleep in some form of interior space and go to learn, work, or play in another space that gives a sense of purpose to our lives. We may briefly go outdoors to get to the site of our day's occupation, but the amount of time spent outdoors is usually only a fraction of the time spent indoors.

Why should we be concerned about the design of interiors? Well-designed spaces can contribute substantially to our sense of well-being, not just serve as shelters. They can be positive influences on our socialization, learning, and general appreciation of life. People's behavior can be positively or negatively reinforced by interaction with environmental forces.

The task of those who design our interior spaces becomes increasingly important as more people spend greater amount of time indoors. Designers must devise spaces that serve the basic needs of the users and at the same time, create positive and uplifting effects. Properly designed environments are efficient and harmonious (Figure 1.1). They can have a pervasive positive influence, which interiors that are not carefully designed may not have.

CURRENT ISSUES IN DESIGN

Interior design is a dynamic profession that changes over time as a result of societal, environmental, cultural, and technological factors. Some of the current issues faced by interior designers include universal design concepts, globalization, technological advances, sustainable design, and health and wellness issues. A major impact on interior design was the pandemic of 2020. This pandemic affected how and where designers work as well as how they physically interacted with colleagues, clients, manufacturers, suppliers, builders, and other trades. The pandemic also placed an emphasis on the quality of human experiences and environments that support health, wellness, and well-being of all users.



FIGURE 1.1 This Haworth showroom in San Francisco is an example of a well-designed interior that serves the needs of the users and creates a positive and uplifting effect.

Courtesy of Perkins +Will; Photo Courtesy of Haworth, Inc.; Nick Merrick © Hedrich Blessing

Universal Design

Universal design is a concept that encompasses the design of worldwide environments, spaces, objects, and communication with the intent of serving the widest range of users, regardless of age and physical abilities. Universal design can include accessible design, which specifically focuses on people with disabilities and their right to access entities. However, the two terms should not be used interchangeably. Universal design is involved with more than providing minimal compliance with specific accessibility requirements and guidelines. It seeks to integrate accessible features into the design of the building, interiors, and objects. It addresses the usability issues of spaces and equipment, instead of merely setting standards and minimum requirements, which accessible design does. See Chapter 10 for more detailed information on accessibility. Interior designers are also involved with designing for special populations, which include people of all abilities and ages, including children, the elderly, and those with temporary or permanent special needs (Figure 1.2).

Globalization

Interior designers often work on a global scale and with multicultural communities and people. This is particularly true today as the Internet and other digital media allow designers and others to communicate worldwide. Designers may encompass a multitude of nationalities, cultural traits, physical needs, and preferences. The use of space and the meaning of color may vary among different cultures, regions, and countries. Materials indigenous to a region may also affect how environments are built. Therefore, designers must be aware of cultural beliefs and preferences in order to propose appropriate design solutions for a global market (Figure 1.3).

Sustainable Design

Sustainable design seeks to reduce the negative impacts on our environment, eliminate nonrenewable resources, and promote the interaction of people and the natural environment. The need for sustainable design is a direct



FIGURE 1.2 Mattel Children's Hospital UCLA is designed to serve the needs of its special population.

Courtesy of Perkins + Will; © fotoworks/Benny Chan



FIGURE 1.3 This hotel in Hyderabad, India, infuses a modern design with the local motif traditions and is inspired by the region's cultural influences.

Sailko/Wikimedia Commons/CC-BY-SA-3.0

FIGURE 1.4 Purdue University's net-zero energy house utilizes hickory flooring, white oak cabinetry, and poplar ceiling beams, which are all environment friendly, have longer life cycles, and need less replacement.

Jim Tetto/U.S. Department of Energy/Public domain



result of global growth in human population, economic activity, damage to the earth's ecosystem, and depletion of natural resources. Sustainability principles include energy conservation and efficiency, recycled or sustainably produced materials, improved indoor environmental quality (such as air), and requiring performance standards for the quality and durability of products that last longer, reducing or eliminating their replacement cycles (Figure 1.4). Sustainable design is also referred to as *green design*, although the latter term can be somewhat overused to include many things that may not be up to sustainable standards.

The 2030 Challenge is an initiative first put forth in 2003 by the architect Edward Mazria that sets the stage for world reduction of greenhouse gases. It is believed that buildings produce over half of the greenhouse gas emissions on a global scale. The challenge asks the global architectural, design, and construction communities to adopt a series of target dates (2010–2030) as milestones that would result in decreased fossil fuel use, greenhouse gas emissions, and energy consumption. By 2030, the standard is projected to achieve a carbon-neutral state for buildings. See Chapter 10 for Sustainable and Green building programs.

Health and Wellness Awareness

Since the COVID-19 pandemic, designers have a heightened awareness of hygiene and wellness. Interior environments that support health, wellness, and well-being of all occupants should be a priority. The International WELL Building Institute (IWBI) has developed a standard for advancing health in buildings and spaces of all kinds. The WELL Standard (WELL) is similar to Leadership in Energy and Environmental Design (LEED) but focuses more on the building occupant rather than the environmental impact and sustainability of the building itself. The WELL Standard provides designers a way to measure how their buildings and interior environments improve health and well-being. See Chapter 10 for more information on several green programs.

Technological Advances

As the world entered the third year of the pandemic; new technologies were impacting the interior design industry and practice in various ways. Many people around the world saw their lives disrupted by stay-at-home orders, school closings, and the onset of remote work. Organizations were incorporating smart products, such as touchless products to promote productivity and health safety for the well-being of all workers. Advanced technologies were introduced for employee attendance and app-based meetings. Designers needed to know how to operate these devices to continue working remotely. Advanced visualization tools such as virtual reality were needed for presentations as part of the design process.

HISTORICAL OVERVIEW

Presenting a history of interior design is a difficult task since no specific date, person, or space can be documented as the beginning point. The desire to create functional and pleasant interior environments existed long before freestanding buildings were being constructed. Designing interior spaces can be traced back to early cultures that painted pictures on the walls of their caves and furnished them with pelts for comfort. As people began to plan and construct buildings, the structure and the interior space within them were considered interrelated parts of a whole, which became known as architecture. Interior design, like architectural design, has been a basic part of the planning and building process from the beginning. Yet, the use and acceptance of the term *interior design* did not occur until after World War II. Previously, the term *interior decoration* described the finishing touches applied to the inside of a structure, but “interior decorating” was not recognized as a profession until the turn of the twentieth century. Like architecture, interior design and its practice have evolved from primitive enclosures to highly sophisticated structures and space enclosures.

Before the Nineteenth Century

Developing civilizations created shelters to protect people from the elements and serve other basic needs (Figure 1.5). As people became less nomadic, they began to build more permanent shelters. As farming replaced hunting, people gathered into communities with structures for storage, shelter, and protection from enemies.



FIGURE 1.5 Basic shelters use natural forms of grasses and thatch as design elements to protect the occupants from rain and wind.

Justin Smith/Wikimedia Commons/CC-BY-SA-3.0



FIGURE 1.6 The Egyptian pyramids at Giza (2723–2563 BC) provided permanence and concealment.

Ricardo Liberato/Wikimedia Commons/CC-BY-SA-3.0

The Egyptians produced enough crops that they often needed to store or trade-off the surpluses. As their civilization developed, they began to construct temples, ceremonial spaces, and monumental tombs (Figure 1.6). This specialization of buildings and their interiors became more common and could be considered the beginning of nonresidential design.

Greek and Roman civilizations constructed more elaborate and specialized spaces such as temples, bathhouses, and large arenas. They also pondered the meaning of beauty and the proportions of their structures, seeking to create “perfect” buildings (Figure 1.7). Many of these early structures were monumental. Architecture and the design of the interiors were an integral act, not separate endeavors.

As civilizations prospered, structures improved in materials, strength, and flexibility to serve a multitude of needs. Geographical factors also promoted variety in style, as people sought to “personalize” their built environments according to the availability of materials and workmanship in a particular area.

By the eighteenth century, interior spaces had become more than simply functional; they served people’s sense of taste, décor, and embellishment (Figure 1.8). Many of these interiors were created for the rich to display their wealth and luxury. However, the not-so-rich people were also living in interiors that, while not opulent, provided a continuum of design examples throughout the ages.

During this time, interior decoration was the responsibility primarily of the architects, artisans, and craftsmen. For example, English architects in the 1700s were designing interiors and even their furnishings. This trend was continued in America by later designers and architects, such as Samuel McIntire, Thomas Jefferson, and others before 1900.

The Nineteenth and Twentieth Centuries: Decorating and Integrated Design

Interest in interiors and their furnishings was sustained through the nineteenth century and into the twentieth. During this time, two distinct design directions developed. The first evolved from the term *decoration*, and the profession of decorating became established. Based on historical traditions, this direction was predominantly concerned with surface ornamentation, color, texture, furnishings, and accessories. The other direction was more concerned