

# THE BEST OF Lighting Design

By Wanda Jankowski







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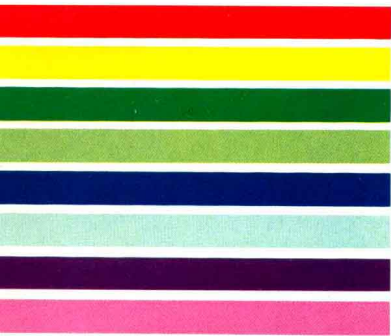
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If not for two professionals who are not now in the lighting field, I would not have written this book: the first was my editorial mentor, a former Editor of LIGHTING DESIGN + APPLICATION (LD+A) and my boss, who embodied then—as he does now—everything creative, professional and fine in an editor—Charles W. Beardsley; and second, Frank M. Coda, who appointed me Editor of LD+A, and inspired loyalty in his staff because he gave it in return. Thank you both. Finally, I wish to thank all the professionals at PBC International, Inc., who worked hard, well and pleasantly to produce this book.

—Wanda P. Jankowski



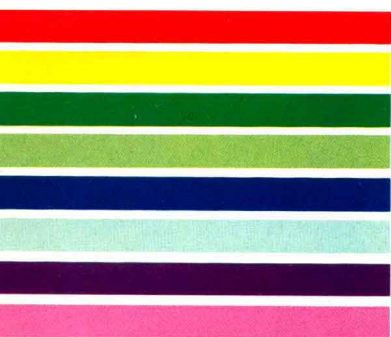
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# FOREWORD

by Abe H. Feder

During my sophomore year at Carnegie Mellon, I was lighting the play "The Tidings of Mary." The last scene of the show featured a view of a mountain in the distance with a convent on top. We were fussing with it, trying to get a sense of the afternoon sun coming across this flat piece of scenery, which was really papier mache raised and indented to appear like rocks and the mountain. We spotlighted it, glowed it, tinted it, all to no avail.

Later that Saturday afternoon, I decided to come back to the theater alone and deal with it. I switched on the stage lights and noticed near the right side of the orchestra a girl practicing on the organ. I went to the middle of the theater aisle and looked at the mountainscape. The girl stopped playing, also looked at it and said, "That's not it." I asked, "What's not it?" She said, "I was born in California, near the mountains, and we never saw any sun washing evenly across the rocks. We saw streaks of sunlight, because of the indentations on the mountains—and that's not it."

I didn't show any enthusiasm. I just went up, focused some lights across the scenery and streaked it. When I got off the ladder, she said, "That's better, but the streaks aren't thin enough."

I didn't have any filter or shield that would thin the rays, so I scrounged up some cardboard and put that in the color frames on the spotlights. It thinned the streaks, and now she said, "You've got it!" I looked, and sure enough, the mountainscape seemed like it was 20 miles away with shafts of sun cutting across the rocks.

What's the lesson learned from this? There are several. Each has to do with what, I believe, makes a lighting designer.

First, unless you have the gift of visual awareness and memory, you shouldn't be a lighting designer. All the books published on lighting, calculations, the invented formats and grids, the reportage, all the assembly of minds who claim that this or that is the standard practice mean nothing if you do not

observe what is around you, and cannot visualize how light affects everything you see.

When you conceptualize a design, do you really picture in your mind what the finished space will look like? Can you mentally frame it three-dimensionally? Some engineers will say, "That's not possible." They will produce calculations from fixture companies and copy one lighting layout from another. These engineers haven't the foggiest idea of what the installation could look like unless it's a copy of something that was done before. They lack the gift of visualization.

The other part of this ability to visualize light and space is a color memory. Red, green and blue are the three colors that make up white. Thousands of cones for each color exist in your eyes, those incredible instruments of vision. If you don't possess a sense of the relationship of color to what you see, you are better off being a gadget salesman, where a sense of color doesn't matter.

Understanding how light and color affect emotion is also a significant factor in being a good lighting designer. The theater taught me this, and it would probably benefit all designers to experience lighting for the theater and get a feel for it.

Henrik Ibsen's play, "Ghosts," was performed years ago by one of the greatest actresses of her day, Alla Nazimova. The last scene of the play takes place between a mother and her son in the living room of their home. On the right is a large bay window and beyond it can be seen the fjords of Norway. The mother is sitting at a table on which sits a lamp with a lighted glass bowl top. The son is seated on the couch. For a moment, there is a sense of warmth in the room, emphasized by the concentration of warmly colored light around the lamp. Then the mother speaks of the shocking fact that through the sins of his father, the son has been cursed with the disease of syphilis. Anguish is seen in the face of the mother as she turns off the lamp. In the few moments

before she walks off stage, the glow disappears, and the room instantaneously changes. The gray light coming through the window sweeps across the room and echoes the hopelessness of the boy and the dreariness of the mother, transforming her face into a mask of death. It was first light and color that reflected and emphasized the glow of life in the mother, and then the gray, bleak light of dusk that reflected the coldness of death in her face.

This brings us to another consideration. The good designer has a gift of visualization, which includes an understanding of light's effect on people as well as on space. He also must have an appropriate attitude towards the tools with which he works.

If you want to write music for a 70-piece orchestra, you have to know what a bassoon, a fiddle and a horn sound like, or you're not going to write music. It will have no meaning if it can't be played. Like the composer, a lighting designer must be familiar with the tools of the trade.

The tragedy of mechanical technique, however, is that there is no critical view of the limitations of the equipment. Engineering schools treat as rote the mechanics of lamps, transformers, etc., as if it were some immutable testament written in stone. To have a critical view of limitations is to question: "Can't this be better?"

I vividly remember a man named Clarence Birdseye who walked into my office in the 1930's, when I was in charge of the lighting for all the Federal Theatre productions, and showed me a little reflector lamp. I asked, "Can't you make it bigger?" and found myself experimenting in my lab with some of Birdseye's fellows.

Well, we put together the first R-40 reflector lamp. We burned it. It was fabulous. I looked at them all and said, "Tell me, did anybody ever do this before?" Birdseye said, "No." So I broke the lamp. I thought they'd all have conniptions. I said, "Clarence, this is not fun and games. Test it again." The result was the birth of the first R-40 lamp.





I had in my equipment room striplights made from sheet metal about eight feet long with nine compartments. Before the invention of the R-40 lamp, these compartments would have held 500-watt A lamps, but the limited projectability of the light from them was inadequate for the purpose I had in mind. By replacing nine 500-watt A lamps with the 300-watt R-40 lamps, I had the equivalent of nine spotlights in one of those strips that projected down to the stage from 24 feet in the air. Given our limited knowledge of lamps at the time, it seemed like a miracle had taken place.

I feel the lighting evolution in our country has been primitive. But it's an ongoing evolution of which the designer should be conscious. Assume no complacency.

Though sources and fixtures have changed and developed, we're still in the "bottle/bulb age" of light sources. Soon there will be lasers, fiber optics, other forms of creating lighting energy and systems which will permit the designer a different palette of color, brilliance and tools with which to work.

Tools change. The good designer should be contributing to that change and not be victimized by the manufacturer. The manufacturer has to endow the product with capabilities; sometimes, however, what is stated in a catalog may not be accurate or complete. Always see how a lamp works first hand; test it yourself. And don't say, "This equipment is all I've got. I must design around it." Make the equipment work for you.

This leads to yet another consideration in what makes a good designer, and that is responsibility—to himself or herself, and to the client. In the 12th and 13th centuries, Italian painters operated ateliers. Young apprentices filled in the canvasses, roughing in patches of line and color for the masters. In the final analysis, however, the finished masterpiece was the vision of the art master himself—Titian, Tintoretto, or others.

You may have confreres, but eventually

the design opinion has to be yours, and there's something dictatorial in that final opinion. There can only be one final choice—and chooser—of that design vision. It is yours.

Lighting is the art of revealment. What do you reveal? More often than not, when a client comes to an architect or designer, he has an idea of what he wants done. If he could do it himself, he would have done it. The lighting designer's responsibility is to create a vision—using his gift of visual awareness and memory, his experiences, conditioning and background—which will reveal as fully as possible the client's intent. The lighting designer should not superimpose his or her talent on that of others. He or she reveals that which is the design intent of others.

Finally, I would like to summarize how that enlightening incident in my youth at Carnegie Mellon illustrates what I have come to believe makes a lighting designer:

1. *Visual awareness and memory.* I transformed in my mind's eye that girl's verbal description of a mountainscape (since I had never seen one) into a three-dimensional vision of what I wanted that lumpy mass of papier mache to look like. That vision had to include intensity, color

and the emotional effect it would have on the audience.

2. *Consciousness of product limitations.* I was stubborn enough not to settle for less because there was no product at hand that could thin the streaks of light. I modified materials to fit the concept.

3. *The designer's responsibility to himself or herself.* I came back to the theater alone to deal with the mountainscape problem. Unless I got it straight in my head—unless I had a vision—working with the assistants and electricians would have been a waste of time. And I didn't stop "fussing" until I achieved in actuality what I envisioned.

4. *Responsibility to the client.* The lighting design revealed the intent of the playwright. It did not call undue attention to itself. It worked as a coherent light "part" designed in harmony with the "whole."

In closing, I would like to leave this thought: As future societies invent and experience new forms of living environments—whether they be underground or in outer space—the tools, palette and methods of the lighting designer will evolve and adapt to them. However, the basic principles of lighting design—and what makes a lighting designer—will never change.

Abe Feder was the first independent lighting designer in both the theatrical and the architectural worlds. His firm, "Lighting By Feder," is located in New York City.

His Broadway credits are legion and include "My Fair Lady," and "Camelot." His architectural credits range from airports and geodesic domes, to miniature fountains and pocket-sized apartments. They include the United Nations in New York, Philharmonic Hall at Lincoln Center, Roosevelt Raceway, Buckminster Fuller's first geodesic dome, San Francisco Civic Auditorium, the terminal plaza of the Kennedy International Airport, Harvard Law School, the Minskoff Theatre on Broadway, eighteen of the Wickes Furniture Showrooms, the Kennedy Center for the Performing Arts in Washington, D.C., and the Rockefeller Center Plaza and Facade, the RCA Building, the Atlas Sculpture, and the International Building lobby in New York. He is responsible for many bulb and fixture developments which are now catalog standards.

Abe Feder was the first President of the International Association of Lighting Designers (IALD) and is an IALD Fellow, as well as a Fellow of the Illuminating Engineering Society of North America (IESNA).



# INTRODUCTION

The projects collected in this book, except two, have received awards from the following lighting programs and competitions over the past five years:

**Lighting Design Awards Program,**

sponsored by the International Association of Lighting Designers (IALD)

**International Illumination Design**

**Awards Program,** sponsored by the Illuminating Engineering Society (IES) of North America

**Edison Award,** sponsored by the General Electric Company

**Halo/SPI National Lighting**

**Competition,** sponsored by Halo Lighting and held under the auspices of the American Society of Interior Designers (ASID)

The main criterion for inclusion in this book was that the projects be top, or near-top award recipients in a lighting awards program or competition. Selection was not based on my personal taste but on the judgment of the many professionals drawn from the lighting, interior design and architecture communities who served as judges on the awards panels during the past five years.

One of the two exceptions mentioned above is the Rockefeller Center project, which received the 1986 Albert S. Bard Award for Excellence in Architecture and Urban Design from the City Club of New York. The award, usually presented to an architect, was given for the first time in its 24-year history to a lighting designer.

The second exception is the Statue of Liberty. It was completed in July 1986, too recently to have garnered any awards. It is included here because of its historic and national importance and because of the deft use of the latest technology to bring the designer's vision into reality.

Though this book contains a fine and varied sampling of the best of lighting design, it is not intended to be all-inclusive. Not all projects which have won awards in the above-mentioned programs in the five-year period are included here. Some are omitted because of time and schedule restrictions, others because of photographic limitations. In addition, not all outstanding lighting designers are represented in this book. There are fine designers who choose not to enter awards programs; others may have won awards in time periods or for projects not covered here.



The projects included in this book use a variety of light sources—from the pure beam of a laser, to the multi-faceted, complex array of sources integrated in a disco. Several styles are represented—from the decorative, refurbished chandeliers in a hotel lobby, to the angled shafts of light from concealed fixtures that draw attention to the altar of a church; from inconspicuous track lights in blacked-out ceilings used to highlight merchandise, to indirect fixtures in banks and offices that enhance architectural coffers.

Projects are featured which use currently available products—streamlined sconces and portable lamps, and simple, recessed downlights in a high-quality residence. Others are presented which use fixtures and sources that were custom designed—the slim line lamps for the exterior accenting of a shopping center, and new metal halide lamps which produce the desired color rendering of a statue's green patina. Daylighting applications are also included—active and passive solar systems that transmit light below the earth's surface,

and mirror systems that transmit daylight into a New Mexico residence.

Installations with space and budget limitations are presented—a New York restaurant, a fashion showroom, a redesigned yacht. Also featured are large-scale, large-budget projects—a laser-filled condominium, a soaring Manhattan skyscraper.

Each of these projects displays the sensitivity of its creators to light as a design medium. They allowed light to contribute its own qualities and beauty to a space, while integrating it with the architecture and interior design.

Though the emphasis in this book is on the visual beauty and enhancement of the environment, engineering elements, calculations, measurements for beam angles and fixture positioning also were very much a part of the design of these projects. Practical requirements had to be satisfied in order for these installations to function successfully: Can maintenance be well-handled by the owner or the staff? Is the lighting energy-efficient and cost effective? Can the equipment be easily repaired or replaced? Can the owner afford to operate the system?

Because the designer's vision cannot be translated into reality without the use of wires, tubes, gases, glass, plastic and metals that make up lighting system equipment and its accessories, a chapter on new products is also included. The business of lighting and the kinds and costs of products are as much a part of the melting pot from which successful design ideas spring as the artistic and engineering considerations.

We hope you will find this book to be a valuable resource for design ideas, a compendium of concrete examples of techniques for creating lighting effects, and a visual embodiment of what results from an effective use of the qualities of a good lighting designer. As Mr. Feder explains in the "Foreword": a successful designer must have visual awareness and memory, consciousness of product limitations, and a sense of responsibility to his or her own design vision as well as to the client's needs and ideas.

—**Wanda P. Jankowski**



## CHAPTER 1

# BANKS AND CORPORATE OFFICES

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**S**everal years ago, in the midst of the energy crisis, a great deal of experimenting and designing with high-intensity discharge sources—metal halide, high pressure sodium, and combinations of these—was carried on in office environments in an effort to keep energy consumption and costs

down. Though high-intensity discharge sources are still used today (the Calcasieu Marine National Bank featured here employs custom-designed metal halide upright luminaires), fluorescent is still undoubtedly the most popular light source for use in offices. Fluorescent strips and furniture-mounted fixtures are used in the Calcasieu Bank, and custom-designed pendant-mounted luminaires are installed in both the Fidelity and Wells Fargo Banks.

Comfort and productivity in work areas go hand in hand. Interior design and architecture details that make a pleasant work environment can be enhanced significantly with the proper illumination. Some examples are:

1. Original fixtures and architectural details in renovated buildings may have a beauty and charm worth preserving. In the Fidelity Bank renovation, handsome, white glass hemispherical fixtures once used in elevator lobbies were cleaned. The lamps were replaced, and they are now being used in other areas of the bank.