

## **CHAPTER 1**

# The Lighting Design Profession

“Architecture is the correct and magnificent play of forms brought together in light.”

Le Corbusier

Without light there is no vision. Without light we cannot see the work of the architect, interior designer, and others who have contributed to creating a beautiful building. Add enough light to enable vision and we can see the shapes of the architecture and the colors of the materials, although perhaps not see them well. Add thoughtfully designed light, however, and it reveals the beauty of the architecture’s forms and rhythms, and the subtle colors and textures of the materials. Light embraces and unifies the other elements of the space. Light directs our attention to important features and allows us to see our work with comfort and ease. It is the finishing touch on the overall experience that the owner and designers have sought to create. This is the work of a professional lighting designer.

The lighting designer Richard Kelly expressed this when he said, “Visual beauty is perceived by an interplay of . . . light. . . . It is therefore of first importance to plan lighting whether creating a new structure, altering an old or making existing conditions tolerable. By the judicious and artful control of [light] you can make an imagined water-color rendering become the real thing, become your idea of the beauty of architecture or decoration . . . light [can] make it easier to see, make surroundings safe and reassuring and stimulate the spirit. . . . To play with light is like playing with magic and is best done with a trained eye to recognize real and relative values, with experience and knowledge of physical techniques.”<sup>1</sup>

Every building needs light, although not every building’s design team will include a lighting designer. Some estimates suggest that less than 10 percent of construction or renovation design teams include a professional lighting designer. The reasons range from the owner’s lack of understanding of what a lighting designer adds to a project to the architect’s desire to keep fees low with the belief that other team members can take care of the lighting just as well as a lighting designer. The “others” who may provide some or

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<sup>1</sup>Excerpt from “Lighting’s Role in Architecture,” *Architectural Forum*, February 1955. pp 152–153.

all of the lighting design include the architect, interior designer, electrical engineer, electrical contractor, and lighting salesperson. While they each have something to contribute, lighting design is not their primary field, making it is more likely that they will not have the basic and continuing education of a professional lighting designer, that they will not be current with new technologies, and that they will not be skilled in the broadest range of lighting techniques.

These other professionals act as lighting designers because the practice of lighting is so young. The first independent lighting design firm opened in 1935. Compared to the centuries-old professions of architecture and interior design, specialists in light are new. However, as awareness of the importance of lighting increases, and as building codes place more requirements and restrictions on lighting, the need for knowledgeable, professional lighting designers is great and growing.

In this book we will be discussing lighting design as a distinct profession. We will look at the ways in which the lighting designer collaborates with the other design team members, develops the lighting requirements for a project, and applies tools and techniques to achieve a successful lighting design.

## The Lighting Designer's Scope of Practice

A lighting designer is someone with the specialized education, knowledge, and experience to apply the art and science of lighting design to the places people occupy. The broad scope of the practice for lighting designers is generally agreed upon, although the details vary by project, organization, and contract requirements. Lighting designers, of course, must possess a great deal of knowledge and skill related to light and lighting, but they are expected to know so much more because their work must fulfill so many functions:

### ■ **visual task**

*A vision related activity, such as reading a book.*

Provide light that is appropriate for **visual tasks** by:

- Identifying visual tasks that are to be performed
- Determining light levels that are typically required for the visual tasks
- Considering factors that suggest the light levels be higher or lower than typical, such as occupant's age, then selecting the project's target light level

Design light that supports the room's aesthetics or environment by:

- Providing light of the appropriate brightness and color
- Defining zones, boundaries, links, and/or separation among spaces
- Using lighting techniques to expand or contract the perceived size of a room, indicate activity levels, and influence overall impressions

Create visual interest within the space by:

- Revealing objects, materials, and surfaces selectively and appropriately

- Using variations in **distribution** to emphasize important room elements/areas and deemphasize unimportant ones
- Applying decorative lighting techniques and decorative fixtures to create additional visual variety

Conserve energy, environmental resources, and the client's money by:

- Integrating **daylighting** into the lighting design where appropriate
- Choosing energy efficient light sources and optically efficient fixtures
- Selecting fixtures and lamps that offer the best value by weighing cost, quality, and performance
- Including controls as part of the lighting design for an added layer of energy savings

Comply with building codes and energy usage regulations by:

- Understanding the applicable building code(s) and designing within their boundaries
- Collaborating with the design team to select the best energy conservation strategy to meet or exceed the limitations of the applicable energy code
- Choosing and locating fixtures to comply with the Americans With Disabilities Act (ADA) and other relevant codes

A designer's contract with an architect, interior designer, or owner may have additional project-specific requirements, such as achieving target brightness levels for special applications. Likewise, a designer may limit the scope of work by excluding certain spaces (often spaces with low design requirements, such as stock rooms, loading docks, and electrical and mechanical rooms) or limiting attendance at meetings.

There are several professional organizations that have their own, slightly different, definitions for the role and responsibility of the professional lighting designer. For example, the International Association of Lighting Designers (IALD) cites the following tasks:

- Meet the illumination needs of the people who use the space
- Select cost-effective and energy-efficient products most appropriate for the project
- Create an innovative lighting solution that achieves the perfect balance of function and aesthetics
- Solve the unique lighting challenges of a wide range of interior and exterior environments
- Strengthen and enhance any space through creative, yet functional, lighting plans

Clearly, a lighting designer does so much more than just "light" spaces. The lighting designer is an equal member of the design team who uses his or her specialized knowledge to provide a design in light that meets the project's requirements while supporting and enhancing the work of the other design professionals.

#### ■ **distribution**

*The way light is spread over an area or throughout a space.*

#### ■ **daylighting**

*The use of daylight as a significant source of light in a building.*

## Professional Lighting Design Credentials

Unlike architecture and engineering, lighting design is not a licensed profession. This is both good and bad. On one hand, it allows designers with a broad range of backgrounds, education, and experiences to enter the profession. On the other hand, it means that anyone can call themselves a lighting designer, regardless of their experience or education. In the past, most lighting designers began their career with an education and work history in one of three other professions—architecture, electrical engineering, or theatre lighting design. A fourth, and the newest, path is to enter the profession after completing an MA or MFA in architectural lighting design.

How do you establish yourself as a talented and knowledgeable lighting designer to potential employers or clients? The first way is by showing your work. Nothing says more about your skills and talents than the designs you've already created. Another way of demonstrating that you are serious about your profession is by holding one or more professional credentials. One form of a professional credential is membership in a lighting-related organization or society. For example, the IALD, mentioned earlier, is dedicated to the concerns of independent, professional lighting designers. The Illuminating Engineering Society (IES) is an organization with membership drawn from the entire range of professionals involved in lighting that includes designers, electrical engineers, lamp and fixture engineers, educators, and researchers.

Another type of professional credential is earned by passing a test of lighting knowledge. The National Council on Qualifications for the Lighting Professions (NCQLP) administers the most important of these, the Lighting Certified (LC) exam. Through a peer-review process, the NCQLP established the education, experience, and examination requirements for baseline certification for anyone involved in the field of lighting, including lighting designers, electrical engineers, architects, sales representatives, and lamp or fixture engineers. The exam, which tests for minimum knowledge and application of that knowledge, is regularly reviewed and updated. The exam content as of 2013 was in these areas:

- Survey/audit of existing buildings and lighting installations
- Design phase
- Financial and energy analysis
- Bid and negotiation phase
- Construction phase
- Operations and maintenance of lighting systems

LC professionals are required to recertify every three years to insure their knowledge of lighting applications and technology is current. Part of what makes the LC credential significant is that the U.S. Government's General Service Administration, the government's landlord, requires that the lighting design for all federal buildings be performed or supervised by a designer who holds the LC credential.

More recently, in 2010, the IALD established a task force to determine the scope of practice and eligibility requirements for a lighting design credential that is more stringent and represents a higher level of knowledge than the LC credential. In 2012 the task force announced the results of a worldwide survey that established seven “domains of practice” for architectural lighting designers:

Goals and outcomes—the design of lighting solutions that satisfy the project requirements and the design intent so the solution performs as predicted

Collaboration—the interaction with other disciplines by serving as an integral member of the team so that lighting relates to its context and adds value to the project

Ingenuity—the contribution of ideas that demonstrate innovation, creativity, originality, imagination, or resourcefulness to foster the goals of the project

Synthesis—the integration of the technical and aesthetic elements of lighting with space and form to shape and enhance the overall experience

Science—the demonstration of how light interacts with people, materials, and building systems by applying the principles of light to meet the relevant technical criteria

Stewardship—the response to known and potential social and environmental impact by designing solutions that avoid or minimize harm, discomfort, and waste

Human experience—the design of lighting solutions that positively affect people

The IALD has decided on a portfolio review format for their credential, but (as of mid-2014) has not announced a timeline for implementation. Readers should consult the IALD Web site, listed at the end of this chapter, for additional and current information.

Finally, the body of knowledge that lighting designers are expected to possess is constantly increasing and changing. As a result, continuing education is an important part of the lighting profession. Keeping up with lamp technologies and changes to building codes is the biggest issue, but sustainability, lighting applications and techniques, vision and psychology, controls, daylighting, and light’s affect on human health are all areas that require continuing education as well.

## Online Resources

Illuminating Engineering Society, [www.ies.org](http://www.ies.org)

International Association of Lighting Designers, [www.iald.org](http://www.iald.org)

IALD Credentialing Task Force Mini-Site, [www.iald.org/about/IALDCertificationNews.asp](http://www.iald.org/about/IALDCertificationNews.asp)

National Council on Qualifications for the Lighting Professions, [www.ncqlp.org](http://www.ncqlp.org)



## Designing with Light Resources

Wiley's companion site to *Designing with Light*, [www.wiley.com/go/designingwithlight](http://www.wiley.com/go/designingwithlight)

Author's companion site to *Designing with Light*, [www.designinglight.com](http://www.designinglight.com)

## References

"About Lighting Design," International Association of Lighting Designers, accessed December 1, 2012, [www.iald.org/design/index.asp](http://www.iald.org/design/index.asp).

"Candidate Handbook NCQLP Lighting Certification 2013," National Council on Qualifications for the Lighting Professions, Austin, 2013.

DiLaura, David et al., *The Lighting Handbook, Tenth Edition*, New York: Illuminating Engineering Society, 2011.

"IALD Credentialing Task Force Update," International Association of Lighting Designers, accessed December 1, 2012, [www.iald.org/about/IALDCertificationOrgUpdate.asp](http://www.iald.org/about/IALDCertificationOrgUpdate.asp).

"IALD Credentialing Task Force Update: Webinar on IALD's Action to Date to Develop an International Certification for Architectural Lighting Designers," by David Becker and Judy Hale Ph.D., June 30, 2013.

"NCQLP Scope of Practice and Services," National Council on Qualifications for the Lighting Professions, accessed December 1, 2012, [www.ncqlp.org/about](http://www.ncqlp.org/about).