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Fundamentals of Energy Efficient Lighting and Controls

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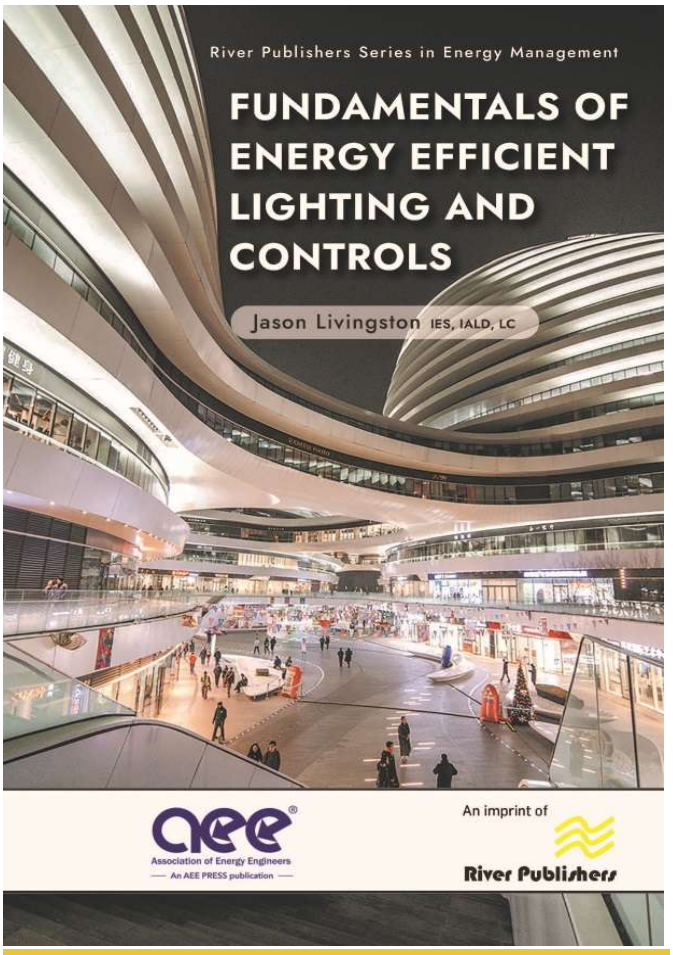
This book is a comprehensive guide to quality, energy efficient lighting design and controls for commercial and institutional spaces. The highly practical text cover topics such as light sources and light fixtures, brightness and energy use calculations, financial analysis, and auditing existing lighting systems.

The introduction of LEDs and the phase out of traditional light sources, along with increasingly stringent energy codes, is leading to highly efficient lighting designs. This book places quality lighting design and consideration for the comfort of the occupants on an equal footing with energy efficiency to emphasize a holistic approach. Featuring over a hundred high quality images and illustrations, this book:

- Provides an overview of lighting design considerations and the design process.
- Thoroughly covers light sources and lighting fixtures with an emphasis on LEDs.
- Explains the requirements found in most energy conservation codes and voluntary programs including lighting controls, daylighting, and limits on lighting system power consumption.
- Discusses non-design issues such as maintenance, energy audits, and the financial analysis of retrofit vs replacement options in existing buildings.

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