

Editor's Note

IES Philadelphia (IESPHL) welcomes the Roadway Committee. We hope the Committee members will have some times to enjoy spring in Philadelphia while they are in town for their meetings.

In this issue, we are happy to bring many important updates from the Society and a number of announcements of design Award winners. We also honor one of our members with the Enghouser Award at the March IES meeting for her contribution toward IESPHL.

With Tech Forum, we strive to provide the lighting community with the latest information concerning product technology, illumination education programs and relevant legislation. Are there topics that we should cover and have not? Would you like to contribute articles? Let's hear from you. Please visit IESPHL at www.iesphl.org or write to us at IES Philadelphia/ Tech Forum, 40 Monument Road, Suite 107, Bala Cynwyd, PA 19004 (610-668-1700).

IES Philadelphia Contacts www.iesphl.org

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ANSI/IESNA RP-8-00

American National Standard Practice for Roadway Lighting

At last, the eagerly awaited new edition of RP-8, American National Standard Practice for Roadway Lighting is available! The primary purpose of this Standard Practice is to serve as the basis for the design of fixed lighting for roadways, adjacent bike-ways, and pedestrian ways. Additional standard practices include the design of Tunnel Lighting (RP-22-96), Parking Facilities (RP-20-98), and Walkways and Class 1 Bikeways (DG-5-94).

The principle purpose of roadway lighting is to produce quick, accurate, and comfortable visibility for the driver at night. These qualities of visibility may safeguard, facilitate, and encourage vehicular and pedestrian traffic. Thus, the proper use of well designed roadway lighting as an operative tool provides economic and social benefits to the public including:

- (a) Reduction of night accidents, attendant human misery, and economic loss
- (b) Aid to police protection and enhanced sense of personal security
- (c) Facilitation of traffic flow
- (d) Promotion of business and the use of public facilities during the night hours

In order to drive a vehicle on a paved roadway with reasonable confidence, speed and safety, a driver must visually determine the following:

- (a) That the pavement ahead is clear of defects and obstacles for a reasonable distance
- (b) The locations of the lane or roadway edges, with in which it is intended to maintain the lateral position of the vehicle
- (c) The location and meaning of the traffic control devices and signs that affect the "rules of the road"
- (d) The present location and future course of moving objects on or near the roadway
- (e) The present position of the driver's own vehicle relative to the immediate destination, other objects, and intended turning locations

The Standard Practice is for fixed lighting of various kinds of public roads and adjacent walkways and bikeways, including freeways, arterial traffic roadways, urban commercial and industrial areas, and residential areas. This document has been revised from the 1993 Practice to include much more information on the lighting of urban areas, and also introduces the concept of Visibility Level (VL) and Small target Visibility (STV). The illuminance and luminance methods have been

retained from the 1993 Practice and design criteria is included for all three systems of design.

In addition to the design criteria for vehicular conflict, increased emphasis has been placed on a second type of conflict, vehicle/pedestrian interaction, which is responsible for a disproportionate number of nighttime fatalities. Three classifications of pedestrian night activity levels and the types of land use with which they are typically associated are included.

Upward light from a luminaire or lighting system must be evaluated. Such light generally adds to sky glow and/or discomfort or disability glare. A fourth classification of luminaire light distribution has been added; full cutoff, in which zero candela intensity occurs at or above an angle of 90 degrees above nadir. To further aid in the design of comfortable systems, without discomfort or disability glare, design criteria for all roadways now includes the evaluation of Veiling Luminance (VL) for all applications. A full discussion of Glare is included in Annex C of the practice.

A full description and background of the STV method of design is included in Annex F. Additional Annexes include information included in previous Standard Practices on a variety of subjects. Of subjects included in previous editions of the Standard Practice.

The Roadway Lighting Committee (RLC) of IESNA is responsible for the preparation of Recommended Practices and Design Guides, research reports, and informational materials relating to lighting applications for vehicular and pedestrian movement at night.

The committee consists of about 120 individuals from the United States, Canada, and Mexico, who represent a wide cross section of the consumer, producer and general interest categories of the outdoor lighting industry in North America. They meet twice a year for three-day meetings, during which 14 sub-committees consider various aspects of the committee's responsibilities and actions, which are summarized in a final meeting of the full committee on the last day of the conference. They are meeting in Philadelphia on March 22-24, 2001.

Charles Oerkvitz



LED for Lighting Applications

For 50 years now, Light Emitting Diodes (L.E.D.s) have been a part of our lives, but it has only been in the last decade that they have become a key player in the lighting industry.

L.E.D.s were originally designed to be part of electrical systems and to serve as indicator lights. They soon became useful in creating lasers for such tasks as reading currency in vending machines. The first L.E.D.s came out in the early 1950's and were red in color (620-1300nm). It wasn't until the late 70's that other colors like green and blue became available. They were very inefficient for any type of architectural lighting purpose, but the different colors made for more distinguishable control boards and computer components. From that time to now, the introductions of new materials in making L.E.D.s have helped to improve the light intensity, color, photometrics options and lamp efficacy of L.E.D.s. These advancements have helped them to become a staple in some applications of the lighting design world.

Beginning in the mid 90's, L.E.D.s were of a high enough efficacies and a low enough cost that they began to replace the traditional red traffic lights in most metropolitan areas. More recently the retrofit of the green traffic lights with L.E.D.s have become cost effective as well. This has been a great success for major cities by significantly cutting down on maintenance costs. It will be some times before it is cost effective to replace yellow traffic lights with L.E.D.s. In addition to traffic lights, L.E.D.s have also been used in architectural interior applications including aisle lights and exit signs lighting for years.

Small start-up lamp manufacturers have been trying for years to create a residential type A-19 lamp with L.E.D.s, but it has always lacked the smooth glow and light distribution of a traditional incandescent lamp. All attempts come out looking more like a Christmas tree than a lamp with uniform luminance. The invention of the L.E.D. A-19 is surely an enviable goal, but seems to be a long way off. More and more realistic applications for L.E.D.s are being studied though. For example, lamp manufacturers like Osram Sylvania are looking at the possibility of a L.E.D. glass unit, which allows multiple sheets of glass to be side lit with L.E.D.s. These could be used as illuminated tiles for accent lighting. Today, L.E.D.s and Organic L.E.D.s are being used to create flat plane TV screens. They are

much more durable than the current LCD screen. Red, green and blue L.E.D.s can be combined to create a single pixel of a screen. There has even been a patent awarded for the invention of an L.E.D. design to make an entire wall of a house into a television screen by using L.E.D.s. Infrared L.E.D.s are now being designed with Fresnel shaped ends for better control of the light and are being used in hospitals. Research shows that this infrared L.E.D. light allows human tissue to heal at 5 times its normal rate. L.E.D.s typically have such a narrow distribution that they make a perfect spotlight, which makes them perfect sources for flashlights. They are now available in all colors including true-white L.E.D.s (with color temperature ranging from 5500 to 6500K). With the long life and low wattage, one should never need another flashlight.

Some of the most interesting L.E.D. advancements that maybe of interest to the lighting designer are the following:

1. L.E.D.s are now available with a 60-degree field angle.
2. There are Tricolor-L.E.D.s to allow easy manipulation of color with a simple control panel.
3. Some L.E.D.s have broken the 100-lumen/watt-efficacy barrier, surpassing fluorescent and ceramic metal halide.

Though the newer white L.E.D.s are regarded as very desirable sources, they are still very costly (approx. \$2-\$3 per lamp) while the original red L.E.D.s now cost about 10 cents per lamp. As newer L.E.D.s become more economical and the efficacy increases and photometric data become more available, we should be seeing a lot more L.E.D.s used in the lighting design world. As L.E.D. technology improves, we can one day imagine L.E.D.s used in museums with no UV radiation concerns, or used as office lighting with great flexibility and creativeness. L.E.D.s can one day be used at homes by your bed to serve as both a reading light and a television. The possibilities are endless. The research is already under way, and these seemingly crazy ideas are not far off. We will all look forward to keep a close eye on the progress of this new source.

-Jason Brown

DESIGN WITH LIGHT

2000

A Student Lighting Design Competition



Year 2000 Project
- Lighting of
Banana Republic,
Walnut Street
Store,
Philadelphia.

IESPHL and Grenald Associates congratulate Xavier Fulbright, Traci Godbey and Andrew McNeil of the Pennsylvania State University AE program as this year's Design With Light student design competition award winners. The second prize goes to Robert Thomas, Ammam Mohammed and Michael Kirkpatrick of the Pennsylvania State University AE program.

The first place team will receive \$500.00 and our second place team will receive \$250.00. The Pennsylvania State University AE department Lighting Program will receive \$1,500 as the coordinating academic department of both first and second prize winners.

The Design With Light competition is open to all students enrolled in any accredited college-level (undergraduate and graduate) degree program in the greater Philadelphia area and any campus of the Pennsylvania State University. Entries are judged by a panel of lighting professionals. This year's judges are Lee Waldron of Grenald Waldron Associates, Howard Lebold of McGillan Architects and Li Huang of Forethought Consulting Group. Awards will be made at the annual Awards banquet on April 19, 2001 at DiPalma restaurant at Philadelphia.

Details of each year's competition are made available through participating colleges or can be downloaded from www.iesphl.org by early September. Entry deadline is due in mid December. Contact Julie Panassow at 215-238-1644 or email jpanassow@thelightingpractice.com if you have any questions.

- Julie Panassow

The following projects received Sections Awards in the 2001 IIDA Award program: Congratulations to our award recipients.

■ The Inspector Sees What the Customer Gets (Carl Watson, David Rodstein)

■ Relighting of Benjamin Franklin Bridge (Dan Edenbaum, Sandra Stashik, Raymond Grenald)



Relighting of Benjamin Franklin Bridge

■ Bloomberg Financial (Gary Golaszewski, Kristen Brooks)

■ Lucy the Elephant (Gersil Kay)

■ St. Mary's Church Steeple (Gersil Kay)

■ Lowes Philadelphia Hotel (Martin Komitzky, Paul Helms, Steven Cole)

■ Museum Shop of the Philadelphia Museum of Art (Mary Alcaraz, Brian Hahnlen, Geoffery White)

■ Singapore Turf Club (Mary Alcaraz, Robert Cunningham, Gary Golaszewski, Richard Garma, Robert Ghisu, John Chase)



Singapore Turf Club

■ Modern & Contemporary Art Gallery, Philadelphia Museum of Art (Mary Alcaraz, Brian Hahnlen, Perry Whiden, Michael Sheriden, Jack Schlecter, Andy Slavinskis)

■ Sports Challenge Exhibit at the Franklin Institute (Mary Alcaraz, Brian Hahnlen, Robert Ghisu, Walter Crimm,

Ken MacKenzie, Polly McKenna-Cress)

■ City Hall Records Office (Mary Alcaraz, Jason Brown, Bonnie Groch)



City Hall Records Office

■ Controlled Mountain Tunnel Lighting - Tuscarpra Tunnel (Charles Oerkvitz, Gerald Forstater, Gerard Schom)

■ J & B Software (Kristen Keilt, Annette Hladio)

■ 1st Presbyterian Church (Kristen Keilt, Annette Hladio)



1st Presbyterian Church

■ Burdines Florida Mall - Palm Sculptures & Facade Lighting (Alfred R. Borden, IV, Michael A. Barber, William M. Kader)

■ Richmond Town Square Renovation (Helen Diemer, Julie Panassow, Darryl Pattison)

■ Renovation and Expansion of WHY? (Alfred R. Borden, IV, Erin E. Friar)



Renovation and Expansion of WHY?

Awards recipients and participants will be honored at the annual Awards banquet on April 19, 2001 at DiPalma restaurant at Philadelphia. Please call IESPHL at 610-668-1700 to make reservations.

-Dave Safford

The IIDA Program, sponsored by the Illuminating Engineering Society of North America (IESNA), recognizes individuals for professionalism, ingenuity and originality in lighting design based on the individual merit of each entry. Not a competition, the judging system is based entirely on how well the lighting design meets the program criteria. Four parallel IIDA award programs recognize all uses of light. The IIDs are made up of four parallel programs:

- The Edwin F. Guth Awards for interior lighting,
- The Paul Waterbury Awards for outdoor lighting,
- Aileen Page Cutler Memorial Awards for creative residential lighting design, and
- Awards for Energy Efficiency in quality lighting.

Awards are presented in each program at three successive levels: Section Awards at local section level, Awards of Merit at the regional level over a multi-state region, International Awards at the international level with entries from the U.S., Canada and Mexico. Special Citations, Awards of Excellence and Awards of Distinction are given out at the International level at the judges' discretion.

For information and applications, visit the IES Philadelphia Section website at www.iesphl.org.

PENN STATE Student Chapter Update

Penn State student chapter is scheduled to have their annual retreat on Friday, March 16 and Saturday, March 17 at Seven Mountains area, outside of State College. The student chapter has invited Sean Good and Gary Gordon of Brinjac Kambic AE firm of Harrisburg to speak and discuss projects with the participating students. They are expecting 20 students to participate.

The chapter is also planning to start an IES-PSU web page to be included in the PSU-AE site. Elections for next year's officers will be held in early April.

-Alison McKenzie

Drexel Lighting Laboratory Needs your help

One of the most vital and important mission of the IESNA is education. A major component of that educational mission is the need to provide practical and effective training for people of many different backgrounds who design, install or use lighting in the course of their business. The application of lighting technology has become more complex and sophisticated; requiring greater knowledge, broader understanding and more complete training in order to obtain the greatest benefits.

To that end locally, the Board of Directors of the Philadelphia Section of the IES has been actively involved in supporting a student chapter at Drexel University in Philadelphia. The latest action is the contribution by the Section of \$5,000 in seed funding to build a lighting laboratory for use by Drexel faculty, students and the local lighting community. The goal is to create an up-to-date, well equipped training facility which has the ability to demonstrate the many beneficial aspects of the proper use of lighting technology. A variety of different types of lighting equipment and controls will be contributed by a number of manufacturers. Anyone who donates to any part of this project will be rewarded with a permanent plaque to be mounted on the wall of the laboratory and can get to use the lab to demonstrate their products to clients.

This project is expected to move forward this spring. If you are a lighting manufacturer, representative or distributor, we welcome your contribution. Someone from Drexel will contact you in the near future. Your support can result in the finest laboratory in Philadelphia. For more details on how to participate in this worthy project, please contact Carl Watson at 610-642-7911.

-Carl Watson

RALPH ENGHOUER AWARD ANNOUNCED AT MARCH IES/LAMPLIGHTERS JOINT MEETING

IESPHL and Lamplighters of Delaware Valley award Julie Panassow of The Lighting Practice with the 2001 Ralph Engthouse Award. The Award ceremony will take place on Thursday, March 22 during the IES/Lamplighters annual joint meeting at the Holiday Inn Old City.

The Ralph R. Engthouse Service Award was established jointly by The Lamplighters of the Delaware Valley (LL) and the Philadelphia Section of The Illuminating Engineering Society of North America (IESNA). It was first awarded in 1980.

The purpose of the award is to "recognize individuals whose expertise in the field of illumination, spirit of cooperation, and distinguished service to the lighting industry exemplify the high standards of Ralph R. Engthouse".

A candidate for this award may be any person who is a current member in good standing of one or both of the sponsoring organizations, irrespective of membership grade, age, or years of service within the organizations.

Each year a committee of seven persons, three from each organization, with the chair rotating between organizations, selects the candidate. The award does not necessarily rotate between organizations. The award is presented at the spring joint meeting of the organizations.

Ralph Engthouse arrived in Philadelphia in the early 50s as the District Lamp Engineer

for Sylvania. He rapidly became the information focus for lamp technology in the Philadelphia area and was a very active member of both the Lamplighters and IES, locally and nationally. His prime objective was to be of service to others, without regard for himself or for personal reward, other than the satisfaction of helping others. He retired from Sylvania in 1976, but retained his interest in both organizations until his death in January 1982.

Ralph was a continuing inspiration to many in the lighting industry, locally and nationally. This award was created to recognize those with his spirit. The previous recipients of the Award are as follows:

- 1980 Robert Homan
- 1981 Charles Oerkvitz
- 1982 Joseph Bello and Peter D'Orazio
- 1983 Earle Hawkins
- 1984 Joseph Messa
- 1985 Barbara Boardman
- 1986 Ralph Lau
- 1987 Arthur Pierce
- 1988 No award
- 1989 Donald Kantor
- 1990 Emory Zimmers
- 1991 Sam Zussman
- 1992 Gillis Laverdure
- 1993 Thomas Ward
- 1994 Robert Duff
- 1995 Alfred Borden
- 1996 Sandra Stashik
- 1997 James Dunn
- 1998 Li Huang
- 1999 Donald Brown
- 2000 Paul Kyack



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Place
Stamp
Here

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