



January 2006

# The Lantern

The Newsletter of the Mother Lode Section of IESNA



## Daylight-Linked Control Systems

What design features of a building promote greater savings from daylight-linked lighting controls? More windows or better shading..? Dimming ballasts or simple switches..? Tinted or clear windows..? Until six months ago nobody knew for sure what the answer was, but Heschong Mahone Group recently completed the first large-scale U.S. field study of daylight-linked control systems, to determine whether or not they work in real buildings, and what design features yield the best energy savings.

Owen Howlett from Heschong Mahone Group will describe the findings of the field study, which gathered real-time data from 120 spaces on the West Coast. The findings show that in sidelit buildings such as offices and schools, controls are saving only 25% as much energy as they should be, but the good news is that the study identified many design features that are statistically linked to greater savings.

If designers and manufacturers understand and act on these results, control systems can become radically more effective and reach their full potential in promoting visual comfort, energy savings, and especially peak demand reduction to improve summer air quality in California.

Owen works for Heschong Mahone Group, Inc. He specializes in research into energy-efficient lighting and control systems, and daylighting. Before coming to HMG, Owen spent a year at the Lighting Research Center as a visiting scholar, and prior to that he worked for the Austrian light fixture manufacturer Zumtobel Staff Lighting on human factors research and market development.

<b>Date</b>		<b>RESERVATIONS</b>	
Wednesday, January 18, 2006		Please make reservations by Friday, January 13.	
<b>TIME</b>		John Hickman, 916-412-6995	
Board Meeting	5:00 pm	<a href="mailto:hickmanjohn@comcast.net">hickmanjohn@comcast.net</a> (preferred)	
Dinner Served	6:30 pm		
Presentation	7:00 pm	<b>ADMISSION</b>	
<b>LOCATION</b>		Member w/reservation	\$25
Andiamo's		Member w/o reservation	\$30
3145 Folsom Blvd., Sacramento		Non-member w/reservation	\$30
916-456-0504		Non-member w/o reservation	\$35
		Full time Student	Free

PLEASE NOTE: Because we are charged, we must bill for reservations made but not kept.

*Please share this Newsletter in your office*

*Prez Sez*

Happy New Year!

I hope your holidays were restful, joyful, and full of blessings. As we begin our year we have new hopes, dreams, goals and a new beginning. With this year ushering in the Centennial Conference, we look forward to new innovations and technological advances with lighting along with a better understanding of how IES began. Some of us are die-hard lighting designers, engineers, contractors, and some of us began our careers with a simple light bulb collection when we were young (go figure). No matter our background - IES has given us a common bond - a level where we can all relate - we love the field of lighting!

I wish everyone could attend the conference, but the few that are brave enough to endure New York in January have agreed to update us with their experiences. Please join us as we celebrate the 100<sup>th</sup> Birthday of IES at this month's meeting.

I hope all your dreams come true this year!

Sincerely, Connie Buchan

Thank you, Miguel, for graciously accepting the responsibility of Treasurer along with your current position of Secretary.



*Connie Buchan, PE, LC*  
President 2005-2006  
916-732-6404  
[connie.buchan@smud.org](mailto:connie.buchan@smud.org)

## Membership

Just some pieces of trivia regarding the Mother Lode Section:

❖ Established in 1936.

As of mid-December the membership included:

❖ 110 members

❖ 8 Sustaining Members:

- ✓ California Energy Commission
- ✓ Capitol City Design
- ✓ CJS Lighting Energy Management Systems
- ✓ Lighting By Design
- ✓ Lighting Systems Inc – Roseville
- ✓ M Neils Engineering Inc
- ✓ SMUD

❖ 7 Members of over 40 years:

### CONGRATULATIONS!

- ✓ Adrian Nestor
- ✓ Chuck Martin
- ✓ David Arrigoni
- ✓ G. Pierce
- ✓ John Holzinger
- ✓ Kenneth Wakefield
- ✓ Dick Hartshorne

❖ 16 new members in 2005

Current borders of the Mother Lode Section stretch from south of Bakersfield to the Oregon state line, and from the coast range to the Nevada state line. Typical elections elicit less than 20% participation. Typical meeting attendance is 20-30.

How many new members will we recruit this year?

Happy New Year!

*Gale Spencer, LC*

Section Membership Chair  
916-649-2220  
[litegal@surewest.net](mailto:litegal@surewest.net)

## NO REC Meeting

**Happy New Year Everyone,**

We had a REC meeting scheduled for next month in Las Vegas.

Unfortunately, I have a conflict and will be unable to be out of town on Friday, Feb. 3rd. As such, I am officially cancelling our meeting. I suspect this will ease some of the financial burden on those of you attending the Centennial.

Hopefully, no one has made airline reservations already. If so, I apologize for not letting everyone know earlier.

I still expect to see everyone at our June meeting in San Francisco. Best wishes,

*Thomas Tolen*

REGIONAL VICE PRESIDENT  
TMT Associates

[tom@tmtassoc.com](mailto:tom@tmtassoc.com)

## Five for Four Offer.

The Mother Lode Section is offering admission to five regular meetings for the price of four meetings! (The Winter and Summer socials are excluded from this offer).

The cost is \$100.00 for five meetings. Meetings do not have to be consecutive.

You may purchase your five for four tickets at any IES meeting through January, 2006.

Contact John Hickman to purchase your five for four tickets.

916-412-6995

[hickmanjohn@comcast.net](mailto:hickmanjohn@comcast.net)

## Illuminating Engineering Society of North America

### 100th Anniversary

Centennial Conference,  
January 8-10, 2006

[http://www.iesna.org/100/  
Convention/overview.htm](http://www.iesna.org/100/Convention/overview.htm)



Celebrate 100 years of illuminating engineering and design by attending the IESNA Centennial Conference in New York City. Conference events are designed not only to honor past accomplishments, but also to afford opportunities for collective imagining of our future. Exhibits, keynotes, discussions, presentations, awards, and gala soirees will all play important roles in this significant celebration.

Participants will gather at the historic New York Academy of Medicine to hear Professor David DiLaura deliver a stirring opening address, featuring a look back at the early days of the IESNA and the lighting profession. Following a retrospective of the Society's design awards

programs, the celebration will move to the nearby Museum of the City of New York, where attendees will enjoy an evening of networking and historic delight at the opening of the museum's exhibit, "Transformed by Light: The New York Night."

There will be important sessions on Lighting Education, Research, Technology, and Design & Application, variously presented by experts who apply keen observations of past achievements to their visions for the future. Recognition of committees, individual members, Sections and Regions will be woven into the celebratory agenda, underscoring the importance of volunteering

and involvement in the Society. A "can't miss" event, The IESNA Journey Through Time, will showcase collections and displays from lighting history enthusiasts with representation from each decade since the IESNA's founding in 1906. The capstone will be the gala cocktail reception and celebration dinner, featuring a closing keynote by Dr. Alan Lewis, IESNA President 2005-2006. Every moment of the IESNA Centennial Conference is planned for sharing. Join us. Together, we will commemorate our Society, reflect upon our experiences, and envision our future

*Gale Spencer, LC*

Section Centennial Chair  
916-649-2220

[litegal@surewest.net](mailto:litegal@surewest.net)

### Centennial Lighting Project



in partnership with KaBoom. An empty lot was cleaned up and the equipment was installed.

Kids were able to play in the park until dark, which is happening much earlier now that winter is approaching. The Sacramento Police department asked if SMUD could install lights. Regrettably, the homeowners association did not have a budget for such a project.

The project has already started to move forward. The Sacramento Police Department has been notified and they are thrilled. The homeowners association has agreed to pay for the electricity and is very thankful to everyone involved. We are excited with the prospect of the project. A few lighting representatives have already offered to contribute.

The Mother Lode Section adopted a lighting project for the IESNA Centennial Celebration. The board selected a local playground that has no lighting, located in the north corner of Morrison Creek Estates.

It happens that the Mother Lode Section has been looking for a Centennial lighting project that would be enduring. The idea for illuminating this park was presented and adopted at the October Board of Managers meeting

As the project progresses please look for updates in The Lantern.

The following have donated goods or services:

The playground equipment was donated by Home Depot

**Lighting By Design  
Gale Spencer, LC,  
IESNA**



The project is moving forward even though the weather has not been friendly. Ameron Concrete Poles has offered three 19' base mount poles. Cal-Lighting has toured the site and is checking their inventory for possibilities. Pictures are available and measurements have been taken for the lighting layout. With the start of the new year we will be moving forward and welcome any assistance we can get.

*Mark Crume*

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## Lighting Education

The Mother Lode Section of will be offering an "Introduction to Lighting" course.

### When:

Saturday February 11th 2006  
9 am – 3 pm  
Lunch included

This course is designed as an introduction for people with little or no knowledge of lighting. The course covers basic lighting principles, terms and calculations. This course will provide a good background for people who

want to explore the world of lighting or move to the next level by taking the ED-100 course.

### Registration:

The cost of the class is \$50. Please make checks payable to the IES Mother Lode Section (not to SMUD). Include name, company, address, and daytime phone number of each person registering and mail your check (no cash or credit cards numbers) to:  
Mark Crume, c/o SMUD  
PO Box 15830, MS A102  
Sacramento, CA 95852-1830

### Where:

SMUD Energy & Technology Center  
6301 S Street  
Sacramento

For a directional map please see <http://www.smud.org/about/map/index.html>

Space for this class is limited and registration is, first come first serve.

*Mark Crume*

Education Chair  
[rcrume@smud.org](mailto:rcrume@smud.org)  
916-732-6672

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## Title 24 Update

The California Energy Commission has begun development of the 2008 update to the Building Energy Efficiency Standards.

**The first phase** of the development process will include a series of public workshops to communicate to the public what changes the Commission is considering, to share the results of related research sponsored by the Commission, utilities, and other stakeholder groups, and to obtain input from the public.

**The second phase**, expected in mid to late 2006, will present draft language for the 2008 Standards based on the discussions in the first phase and will offer opportunities for further public input.

**The third phase** will be the formal rulemaking during which final proposed language for the 2008 Standards and related documents will be released for public comment for 45 days (this language is referred to as "45-day language"). If needed, substantial changes to 45-day language would subsequently be released as "15-day language." This phase will also include Energy Commission adoption of the final Standards that would take effect in late 2008. The Commission expects this third phase in late 2006 and early 2007, with adoption in mid 2007. Preparation of the Residential and Nonresidential Compliance Manuals will follow Commission adoption.

Workshops and Associated Documents, Reports, Public Comments, and Transcripts are listed on the following web link:

<http://www.energy.ca.gov/title24/2008standards/documents/index.html>

## Butterfly wings are LEDs

Pigment on the butterflies' wings absorbs ultra-violet light, which is then re-emitted, using fluorescence, as brilliant blue-green light.



Fluorescent patches on the wings of African swallowtail butterflies work in a very similar way to high emission light emitting diodes (LEDs). These high emission LEDs are an efficient variation on the diodes used in electronic equipment and displays.

The LED developed at MIT uses a two-dimensional photonic crystal – a triangular lattice of holes etched into the LED's upper cladding layer – to enhance the extraction of light. Bragg reflectors were used to control the emission direction. These high emission devices potentially offer a huge step up in performance over standard types. It has been shown that African swallowtail butterflies have an identical method for signaling to each other in the wild. The wing scales on these swallowtails act as 2D photonic crystals, infused with pigment and structured in such a way that they produce intense fluorescence. Most of this light would be lost were it not for the pigment being located in a region of the wing which has evenly spaced micro-holes through it. This slab of hollow air cylinders in the wing scales is essentially mother nature's version of a 2D photonic crystal. Sources: BBC

*Connie Buchan, PE, LC*

To read more visit [LandscapeOnline.com](http://LandscapeOnline.com) magazine, November 18, 2005 issue.

## Just for Fun

### Ice Fishing

Georgie went ice fishing, but wasn't having much luck. He saw a guy across the way who was hauling in a bounty of fish. So Georgie went over to the guy and said, "What are you doing to catch all those fish? I'm just a few feet from you and am catching nothing."

The guy answered in a muffled voice, "Ee yer erms orm."

Georgie didn't understand, and the guy tried again, "Ee yer erms orm."

Georgie still couldn't understand him, so the guy repeated, spitting off to the side, "Spff...I said, keep your worms warm."

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## The Lantern – Yosemite “Satellite” Section

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Update on what is on our agenda for the upcoming year:

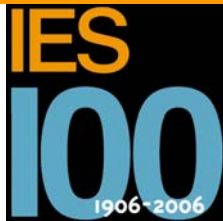
- ✓ November 30th      Lamp and Ballast Technology
- ✓ January (TBA)      ED-50
- ✓ January 18th      Environmental Lighting / Dark Skies Presentation
- ✓ January (TBA)      ED-100
- ✓ February          LEED Presentation
- ✓ March              Title 24 – Part II
- ✓ April                Yosemite “Satellite” Golf Tournament

As we value our membership’s input, please feel free to contact any of our Officers, Board of Managers and/or Committee Chair people with any suggestions. In addition, if you would like to become more involved by participating as a Committee Chair please introduce your interest at your convenience.

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<b>CJS Lighting</b>	Robert O'Flaherty
<b>Gale Spencer</b>	Lighting By Design
<b>Interface Engineering, Inc.</b>	Stuart Lindsay
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**PROGRAMS** – John Hickman, CJS Lighting

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