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LIGHTNEWS



*The Newsletter of
Illuminating Engineering Society
of North America
B.C. Section 37
Region 04, Northwest
November 2002 – Fall Edition*



President's Comments

by Cristian Suvagau

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Be sure to visit the IES BC Section's home page at:
www.iesbc.org



The ancient Greeks said "everything is in continuous movement". We do subscribe to this and we are coming back to you with a full 2002-2003 agenda of exciting lighting events, technical updates and news !

Welcome to the Fall 2002 Edition of the IES BC Section's Newsletter!

This year 2002/2003 Season began nationally with the very successful Annual Conference in Salt Lake City. Members of the IES from all over the world attended. This is North America's foremost lighting forum, to see and hear all about latest technical papers, educational seminars and to share ideas about the future of lighting. We had many local members attending and one presenting a technical paper. Our local IESNA Fellow – Ian Ashdown spoke on - Correlated Colour Temperature and White LED's.

Anyone looking at submitting a Technical paper for the 2003 Conference, Abstracts are due to IESNA by December 3, 2002. The Annual Conference will be held in Chicago, May 2003.

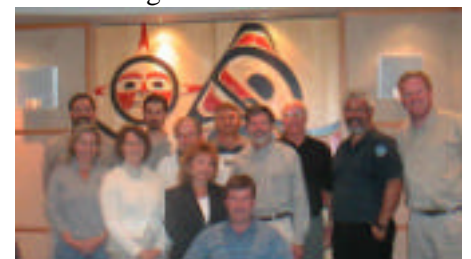
The Street & Area Lighting Conference in Scottsdale, Arizona in Oct 2002 was also well attended. The program included LED traffic signal & LED streetlights, light pollution, induction lamps and legislation effecting street and area lighting.

Locally we kicked-off the Seasons Program with a HOTest topics from one of the COOLEst light sources, LED's. The "Solid State Lighting Technology Update" with our guest speaker being Brent York from TIR Systems. Brent's presentation and interactive displays made the year's first seminar very informative and enjoyable. No doubt, we'll have to ask Brent back again next year for an update in this fast growing and changing industry.

Your Vice President/ Program Chair Darren Luce has an exciting Season Program for the balance of the year (Lighting Controls Seminar, Regional Video Tele Conference, Film/ Entertainment Lighting Seminar, IIDA + Vision Awards Gala Evening, Lightfair Review + Progress Report).

We are always looking for Seminar ideas that will be beneficial for our local members; please send suggestions or ideas to Darren Luce (darren_luce@tirsys.com)

The IES BC Section on September 28, 2002 hosted the IES Regional Executive Committee (REC) meeting in Vancouver at BC Hydro . This Regional Meeting had many local and regional IES members attending, Paul Mercier/ Chinook RVP, Mark Ramsby/ Oregon, Jeff Davis, Oregon (Past RVP), Ross Probert/ Northerr Gateway, Kay Ferguson/ BC (Pas RVP), Colin MacDuff/ BC, Rick Tucker/ BC, Gerry Henderson/ BC Betty Lou Pacey/ BC, Cristian Suvagau/ BC, Yvette Lauer/ BC Stephanie Conway/ Puget Sound, Dar Salinas/ Puget Sound.



Some of the highlights- Carl Koehler has accepted the position of Regional Education Chair. New ED-150 Course material will be out soon; Regional Sections have sent a their

input and comments to New York about the new material.

IIDA Energy Award as been discounted with out a replacement at a national level; the Regional IES is looking into offering a Regional Energy Award. The next REC is in Portland March 22 with Advanced Education Class (LEU credits) on March 20 and IIDA Judging on March 21, 2003.

The lifeblood of any the IES Section is their Educational Programs. Locally we are very fortunate to have Kay Ferguson and Owen Stevens heading up our Education Programs. This past summer an ED-150 was completed. This fall an ED-100 and NCQLP Study Class started.

I would also like to welcome a couple of new faces on the board this year Yvette Lauer/ Secretary, Robert McBain/ IES Education Liaison.

Please start think about your Vision Award projects for 2003, if you have any question or need copies of the applications, contact Carl Koehler (ckoehler@leviton.com)

Editorial

by Cristian Suvagau

And what a SUMMER we had! This one to remember, and to pay off for our high real estate costs...

Now that the Fall (better known as Autumn outside the continent) has come (but not the rainy days, yet), your IES section is preparing a full agenda, with seminars, product news, Pacific Northwest regional teleconferences, lighting awards and many more. Take for example the month of November with 4 lighting events (including the NRC-PWC workshop on November 29)!

However, all these events cannot be successful without your contribution, so, participate to the seminars and call us for interesting ideas, initiatives and articles...

For this newsletter issue we have found some interesting energy

efficiency initiative from our neighbors in Alberta, a fiber optic application in our own back (ship) yard, some R&D news and more local news.

Stay cool, be warm and enjoy your LightNews!

Calendar of Events

Following is the IES BC Section new 2002/2003 Season program:

November 19 *Regional Video Teleconference – “Light up the World”*

Guest Speaker: Dave Halliday

Dinner 5:00PM-7:00PM, William F. White facility

November 26 *IES Christmas Fundraiser + Past Presidents Dinner – (Support the St Paul’s Hospital Lights of Hope)*

Dinner + Dancing 7:00PM, Sheraton Plaza Hotel

February 20 *Film + Entertainment Lighting*

Guest Speaker: TBA

Luncheon 11:30AM-1:30PM, William F. White facility

March *Exhibit and Display Lighting,*

Frank Florentine/ Smithsonian Institute

Seminar 8:30AM-11:30AM, Luncheon: 11:30am – 1:30pm, Arbutus Club

April 17 *IIDA + Vision Awards Gala Evening,*

Dinner 6:30PM-10:30PM, loc. TBA

May 22 *Lightfair Review + Progress Report*

Luncheon 11:30AM-1:30PM, Arbutus Club

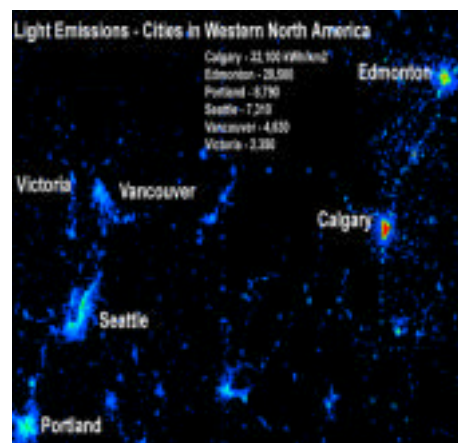
The Power of Light

Light (comes) from the East

The recent news have reminded Canadians that the road to Kyoto passes through ...Alberta...

In true environmentalist spirit, the City of Calgary has begun switching over city streetlights to lower voltage fixtures in an effort to save energy and money, and reduce light pollution. Currently, Calgary is one of the most brightly lit cities in North America. A satellite image of Washington, BC and Alberta, used to measure the intensity of actual light emissions in kWh/km² shows Calgary well ahead of all other cities, with only Edmonton even being in the same order of magnitude.

- Calgary - **32,100 kWh/km²**
- Edmonton - **28,500 kWh/km²**
- Portland - 8,790 kWh/km²
- Seattle - 7,310 kWh/km²
- Vancouver - 4,630 kWh/km²
- Victoria - 2,350 kWh/km²



Through the EnviroSmart Streetlights project, existing 200-watt "dropped lens cobrahead fixtures" are being replaced by 100-watt flat lens fixtures. The astronomical community, for one, has applauded the move, which will increase the

ability to view celestial bodies from within the city. In fact, the City received the Royal Astronomical Society's Responsible Lighting Award in 2001 for work beginning 2000 during a pilot stage of the retrofit project. But the new lights should also improve visibility for motorists and others at ground level, since they reduce glare and shine their light directly onto the roadway rather than off in all directions.

As for energy savings, with a reduction of 100 watts per bulb multiplied by over 40,000 residential streetlights in the city, the city has estimated that it will achieve a six or seven year payback period, with continued savings of \$2 million per year thereafter. And when all the lights are switched over, it should lead to a decrease in carbon dioxide emissions of as much as 16,000 tones/year (since the majority of Alberta's electricity is produced by coal and gas burning generators).

The project began in March of this year (after an earlier pilot phase) in the city's Northwest, where 11,000 street lights will be changed out before year's end. The remainder of the city will be retrofitted over the next four years. Only lights in residential areas will be changed, with some areas such as around playgrounds, parks and some intersections excluded.

Despite the lower levels of light, the new fixtures will still meet the minimum lighting levels recommended by the Illuminating Engineering Society guidelines, and are considered safe. (According to research, there is no direct correlation between decreased lighting levels and increased crime levels. Based on Calgary's pilot studies, there was no significant impact on crime or public safety from the retrofit.)

Calgary is the first city in North America to undertake such a retrofit project, but its efforts have drawn the attention of numerous other municipalities across North America, including Vancouver and North Vancouver.

Light Flashes

By Betty-Lou Pacey, BL Innovative Lighting

What's new in the world of lighting? Can you imagine illuminating an 85ft. pleasure yacht with only fiber? Ultratec Fiberoptic Corporation has designed a micro-illuminator which is being used in marine applications in conjunction with our fiber to illuminate the entire salon, pilot house, running lights, the galley and the main deck.

Why was fiber used for this project? From a design perspective there were a variety of advantages.

1. It was energy efficient. One light source can illuminate many fixtures.
2. The side light fiber which is located in the coves can change color to suit the mood of the moment.
3. Fiber is non-corrosive. Salt air is no problem. Unlike conventional lighting.
4. The fiber which is being used for the running lights is installed in a totally sealed unit. You need never again have to deal with opening your fixture to relamp. Rather the relamping occurs inside the vessel in the illuminator.

This unique vessel is being built here in Maple Ridge and will be featured at the famous Florida boat show.

Annual IESNA Conference

by Cristian Suvagau

The IESNA Annual Conference took place this year between August 4 and 7 in Salt Lake City, Utah. The Olympic City was an excellent host for this event, as it was in the winter. Also, the Olympic echoes still reverberate in the city, some of the new constructed sport facilities (like the Ice Oval) being presented in the conference sessions.

Following two preliminary days of IESNA Committees meetings, the Annual Conferences started on Sunday, August 4 with a couple of workshops on residential lighting followed by an evening cocktail at the sumptuous Grand America Hotel. It was nice seeing old friends and even some ex-Vancouverites like Peter Franck (ex-Ledalite, now with Lightolier in Massachusetts), and Wilson Dau (ex-Ledalite, now with Axis Lighting in Calgary).

Monday morning, Randy Reid, the IESNA elected president officially opened the sessions. For the next 3 days, the program was very dense; two concomitant seminar agendas in parallel with the paper sessions. Here are some of the most interesting seminars:

"What's hot in the utility industry" – strangely enough over 100 years ago the electrical utilities started with the only purpose to provide lighting (households was charged some \$10/ bulb per month). Now, while many utilities do not provide lighting at all, some companies continue to expand their business from cobra heads to decorative products, with a high regard for quality optics and combating light pollution.

"Reporting the Performance of Fluorescent Luminaires" - T5 lamps may be sleek, slim and bright, but are also a constant nightmare for the photometric labs (some reporting efficiencies above 100%), requiring a redefinition of the efficiency definition, thermal gain and testing procedures.

"What's New in Visibility Research" - this 4 hours long seminar was by far the best scientifically event at the Conference. A panel of lighting researchers from Dr. Peter Boyce from LRP, Dr. Guy Newsham from NRC and Terry McGowan from EPRI have presented recent studies on the relationship between lighting and performance. The panelists debated the routes by which lighting conditions can affect human performances: the visual system, the circadian photo biological system.

and the perceptual system. Also, the researchers showed that the obstacles in defining the link between quality lighting and productivity reside in the usual wrong approach. Rather than wrongly focusing on input costs and individual worker performance, studies should express productivity focusing on occupants' well being.

Another "hot topic" was the release of the *new ED-150 course manual*, now in a Power Point Presentation format. However, not contesting the upgrading effort, the manual has scarce handouts, shifting thus the education burden too much on local educators; the final form is still under debate.

Sadly, not been given the prime time slot (left the last on the last day), "*Thinking of the box*" by the ever dynamical Stan Walerczyk recompensed the patient attendance by introducing new retrofit methods and exposing some of the "too good to be true" products and systems.

The Papers sections were: LED (excellent paper from Ian Ashdown on Correlated Colour Temperatures for white LEDs), Applications, Roadway, Photometry, Lighting Updates, Calculations, Lamps and Ballasts, Daylighting, Office Lighting and Effects on Spectrum.

There were many interesting papers and you can see them all in the incoming numbers of "Journal of the IES". However, you may have a chance to see a condensed version of the office lighting research at the **November 29 seminar of NRC, NRCan and PWC, at BC Hydro-Edmonds Auditorium** (contact NRC at 613-952-7673 for registration).

On the more practical side, the ubiquitous Progress Report was well attended as well as the tabletop exhibits, offering those who did not see the San Francisco Lightfair a good look at the newest products.

Finally, for the fun and social part, lots of sun, decent heat (only a dry 35C), daily downtown music concerts and a Lighting Reception at the Dinosaur Museum.

You can find more about the conference in the (just released) October number of the LD+A publication.

News Updates


Job Opportunity at Quantum Lighting:

An experienced Lighting Designer is required for a variety of energy-efficient lighting projects in the Commercial, Industrial and Institutional sectors in B.C. as a member of the Lighting Design team.

Competitive Salary or Consulting Contract offered.
Office location: Coquitlam, B.C.

Quantum Lighting is a leading Design/Build lighting & electrical firm specializing in energy-efficient lighting systems and is a member of the BC Hydro Power Smart Alliance.

Contact: Len Horvath, M.Sc. President
Tel: (604) 526-7717
Email: len@quantumlighting.com


 **Be a star for St. Paul's Hospital...give during Lights of Hope.**

For the last four years, the thousands of lights and stars that graced the front of St. Paul's Hospital during the Christmas season provided a joyful spectacle. The Lights of Hope events raised money for the hospital to purchase life-saving equipment and to support research into heart and lung diseases.


Some of the local IES members are already contributing with their own time and effort to help developing this holiday lighting project. More, the IES-BC section has donated \$1,000 for the last year campaign.

Be a star for St. Paul's and donate personally or throughout your company.

For information on how to donate call St. Paul's Hospital Foundation at (604) 682-8206 or visit the website www.helpstpauls.com


The office of OSRAM SYLVANIA in BC is proud to announce that Colin MacDuff has been awarded OSRAM SYLVANIA's Account Manager of the Year. Congratulations, Colin!



FREE Lighting Seminar


Public Works Canada (PWGSC) National Research Council Canada (NRC), National Resources Canada (NRCan) and BCHydro invite you on November 29th, 2002 to a full day free lighting seminar at BC Hydro Edmonds Auditorium - Skytrain room (6900 Southpoint Drive Burnaby) from 8:30 to 16:00.

This seminar will address innovative products, lighting quality, control and energy savings from many perspectives. Topics will proceed from research, through recommended practice, pilot installations, and conclude with financial incentives for full-scale projects.

Who should attend: Lighting Designers and Specifiers, Engineers Architects, Interior Designers, Facilities Managers and others involved in the design of commercial building lighting systems.

How to register: contact National Research Council Canada - Client Services (Monique Myre) at Phone: (613) 993-0435 Fax: (613) 952-7673.


 **The IIDA - Vision Awards 2002 event is coming soon**
...to a building near you...

We are continuing the excellent tradition of the past years with a new edition of the International Illumination Design Awards.

Start reviewing your best lighting projects completed in the last two years, take representative photos and participate in this renowned professional contest.

In premiere this year: the Energy Efficiency Award sponsored by IESNA-BC and BC Hydro to recognize outstanding energy efficiency lighting retrofits and new design

For more information on this year's edition rules please call Margot Richards at SLS (tel: 604-874-2226).

R&D News

Laser lights up water droplets

courtesy of PhysicsWeb

Physicists have made **water droplets emit white light** for the first time using laser pulses!

Researchers from the University of Lyon 1 in France used femtosecond (10^{-15} of a second) pulses to create nanosized regions of plasma inside the spherical droplets, and this plasma gets so hot that it emits white light. While not targeted immediately for general illumination, the achievement could lead to a new technique for monitoring the composition of clouds and biological pollutants in the atmosphere.

When a high-energy laser hits certain substances, their atoms are ionized and heated into a plasma in a process known as laser-induced breakdown. After the laser is switched off, the electrons and ions recombine and emit their excess energy as light. Since every substance emits a characteristic spectrum, this effect is widely used to determine the composition of materials. But this method has not been used to detect the presence of chemicals in water vapor because physicists have been unable to make water emit light.

Previous attempts to do this - which were based on vessels filled with water - failed because the laser pulses used did not make the plasma hot enough to emit light in the visible part of the spectrum. But now the Lyon team has succeeded by exploiting the spherical shape of droplets of water., blasting them with pulses from a titanium-sapphire laser lasting just 120 femtoseconds. Crucially, the pulses do not deform the spherical shape, which means that the curved back surface of the droplet focuses the incoming pulse back into the droplet.

The researchers say that the intensity of the light in the focus of a 50 μm droplet is boosted by a factor of about 100 compared with the original laser pulse. This creates a region of plasma just nanometers across, which is hot enough to emit white light as it relaxes back to its ground state. The researchers found that most of this light was emitted in the 'backward' direction - that is, in the direction from which the laser pulse arrived. (exactly what required to measure the composition of aerosols remotely).

The team also measured the spectral characteristics of the light at different temperatures and found that the water droplets emitted a spectrum of light very similar to that of a perfect black body.

In Memoriam

Peter Nash a long time supporter of the IES past way this summer. Peter worked for Sylvania and held many different positions with the IES board. He will be sorrowfully missed.

Educational Program Update

ED100 Introductory Lighting



Course: In this course, you will learn about the basic principles of lighting fundamentals.

The next ED 100 started in October, at New Westminster Quay.

ED150 Intermediate Lighting

Course: This course will increase your lighting expertise, promote personal growth and competence in lighting principles, enable you to network with industry experts.

The ED 150 intermediate lighting course - Session 1 is scheduled to start in November. Location to be announced.

If you are interested to participate, please call **Owen Stevens** at 604-945-7131 or e-mail at ostevens@litemor.com

IES - BC Staff Box

The new IES-BC Section's Board of directors for 2002-2003:

<i>President</i>	Colin MacDuff
<i>Vice President</i>	Darren Luce
<i>Secretary</i>	Yvette Lauer
<i>Treasurer</i>	Doug Welch
<i>Past President</i>	Carl Koehler
<i>Education</i>	Kay Ferguson Owen Stevens
<i>Data base/Membership</i>	Rick Tucker
<i>Newsletter Editor</i>	Cristian Suvagau
<i>Publicity</i>	Andrew Lee
<i>Publication Sales</i>	Al Bonisteel
<i>Video Teleconf.</i>	Greg Yellenik
<i>IID & /Vision Awards</i>	Margot Richards Betty-Lou Pacey Gerry Henderson
<i>VA Scholarship</i>	John Baron
<i>Energy, Historian & Webmaster</i>	Roy Hughes

Members at large:

Bernard Crocker, Carl Koehler
Michelle Taschereau

IESNA Mission

The British Columbia Section is a part of the IESNA, a not-for-profit technical society, whose mission is to advance lighting knowledge and disseminate information for the improvement of the lighted environment to the benefit of society .

For news items please contact the editor Cristian Suvagau at (604) 453-6478 or at

Cristian.Suvagau@bhydro.bc.ca