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LIGHTNEWS



The Newsletter of
Illuminating Engineering Society
of North America
B.C. Section 37
Region 04, Northwest
April 2001 - Spring Edition

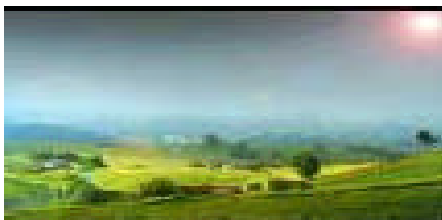


President's Comments

by Carl R. Koehler, LC

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



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

This month I would like to take the opportunity to thank everyone who has taken part in the IES B.C. Section activities. This is my final season as President and I have to say it has been challenging and rewarding. I've always said you "get-out" what you "put-in" with many rewards including the satisfaction of doing something positive for the Lighting Community. I also think we should always "put-back" what we "take-out".

Colin MacDuff and Darren Luce will direct the new slate of officers, and I'm sure they will do an outstanding job at taking the local Section in a positive direction. The complete list of new Board Members will be listed on our Web Page when we have finalized all of the positions. Anyone wanting to be part of the

activity can contact Colin Darren or myself.

Corporately, we always have companies supporting us by allowing their employees to volunteer time to serve on the board and their very generous support is very much appreciated. B.C. Hydro through Roy Hughes and Cristian Suvagau are always there to support us with funds, equipment and space and we cannot thank them enough. Ledalite continues to provide us with a place for our Web Page along with unconditional support and we thank them.

I especially thank the volunteers that have supported me this season as President. Colin MacDuff, for running a great Program and assisting me in a big way; Douglas Welch, for continuing to keep our books straight and allowing me the freedom not to worry about it; Al Bonisteel, for maintaining the Publication Sales chair; Owen Stevens and Kay Ferguson, for running an outstanding education program; Cristian Suvagau, for supporting me several times this season along with coming up with a great new look for our newsletter; Darren Luce, for looking after the IIDA/Vision Awards program; John Baron, for co-chairing with Darren in the IIDA/Vision Awards Program

and developing and organizing the scholarship fund associated with the

IIDA/Vision Awards Program; Michael Graham, for looking after the Energy issues; Roy Hughes, for being our Web-Master and Historian; Joseph Scott, for standing as a Member-at-Large; Greg Yellenik, for standing as an active Member-at-Large and organizing a function this season; Gerry Henderson, for also standing as an active Member-at-Large and committing to REC meetings; Betty Lou Pacey, as another Member-at-Large and actively helping us out as temporary secretary plus organizing events this season; Bernard Crocker, as another Member-at-Large and actively assisting both our Treasurer and Program Chairs; and finally Ruth Anderson, as Past President and being there when I needed help and support plus establishing next season's slate of Officers.

Our accomplishments are many this season. We have 20 active board members made up of specific chair positions and Members-at-Large. All of these people collectively have provided our local industry with an amazing list of positive achievements.

Our program this season provided many topics including a very successful and well attended Software

Seminar, Luncheon Seminars and Tours.

Our Education program ran two ED-100 - 3 day classes, a special ED-100 class for Wesco distributors, another section of ED-150 and a workshop for the LC exam. We add 7 new LC's to our list.

We revised our method of issuing our Luncheon/Seminar notices by separating this notice from our newsletter. Cristian developed a great new look for our newsletter, which will be issued quarterly.

Our Web Page (www.iesbc.org) continues to serve as we had hoped. Our History is continuing to be preserved by Roy and we find him collecting many items. We have a display at B.C.I.T. that is associated with the B.C. Historical Society.

We have a very successful IIDA/Vision Awards program and this season we saw 9 submissions, 2 of which went onto the Nationals. These submissions will be presented at this season's evening event on June 14, 2001. So mark your calendars and please join us. The proceeds from this event have allowed us to award scholarships. Last season we awarded 2 x \$1,000.00 scholarships. This season (June 14th, 2001) we will be awarding another \$1,000.00. Any member or students of members can apply for this scholarship.

We are maintaining a link with the new WCB regulations to assist in the continuing maintenance of this code. We had two extra events this season; one at the Evergreen Cultural Centre and our special Christmas dinner. We are holding a golf tournament this May in association with the BOMA group and next season we are planning a seminar on exterior lighting. Our Member-at-Large program continues to be helpful in assisting us at times of need and maintaining fresh members to the board.

The idea of "putting-back" into the industry could not be shown any better than this. The IESNA is a volunteer group started in 1906 for the betterment of the Lighting Industry. Today, the IESNA has

over 9,000 members across North America plus International Members in Australia, New Zealand, Japan, Republic of China and India. The IESNA continually establishes standard practices for the way we do lighting designs and installations today, not only in North America, but also internationally.

The IESNA is truly "*The_Lighting Authority*".

Local Sections along with Regional Vice Presidents and Regional Executive Committees continue to play their part in keeping the society networking together. The local commitments from active members and corporate members have made a difference and collectively we have provided a benefit to the Lighting Industry, both locally and nationally.

The IES B.C. Section can take pride in the knowledge that we have made a difference and it would not be possible without the collective support from everyone involved. So I thank everyone involved for making my term successful and rewarding.

Calendar of Events

- April 25 IESNA Progress Report – Arbutus Club
- May 31 Golf Tour Golf Tournament - First Annual IES Golf Tournament it's a Joint Golf Tournament with ASHRAE at Morgan Creek (limited registration)
- June 14 Vision Awards Gala – Location to be announced

Editorial

This issue's Editorial article is presented only on the web format at:

<http://iesbc.org/LightNews.html>

Will be back "in ink" next time.

Light Trends

by Greg Yellenik, Whiliam F. White

Had any attractive environmental lighting ideas lately? Imagine how fabulous it would be to walk into a restaurant and see their logo projected on the floor at the entrance, or into a lobby atrium and there are shadows of leaves and branches projected on the walls and floor. What about walking down a hallway in an ambient break-up of colour and texture, or cobblestone projected on the floor or clouds in a large dome ceiling.

There are a couple of ways to project interesting patterns for effective environmental enhancement through lighting. The use of "gobos", a pattern cut out of metal, has been popular in theatre for many years. There are hundreds of stock patterns to choose from and are available at your local theatrical lighting supplier.

The key to success lies in understanding light, optics and knowing what you want. The clarity of the image and it's size are determined by the choice of luminaire and quality of image. When choosing colour keep in mind that a typical colour filter will drop light output by up to 85%. Because of this you need a very, very bright and efficient luminaire. This is particularly important in high ambient light areas where you might be competing with daylight, Mother Nature's...nuclear reactor.

Beam angle and distance will determine the image size and keep in mind that your image will be determined by the beam angle, not the entire field angle. If the image is projected on a surface that is not exactly perpendicular to the beam of light you may get a "keystone effect" which will distort your image. The best suited luminaire for this is an ellipsoidal projector.

Stock metal cut-out pattern and a single colour. This would be a metal pattern in the fixture gate and a

single colour gel at the end of the lens. There are hundreds to choose from, at a reasonable cost. For colour you can go with an inexpensive plastic colour filter. For long term use a dichroic glass filter is recommended.

Stock metal cut-out pattern and a colourizing effect, like the Rosco Colour Wave, Colourizers or Prismatic. These enhance the colour of the image by giving it some modelling. This method also runs in the same money range.

Custom metal cut-out patterns and colour them as you wish. Your custom pattern could be a corporate logo, slogan or even a design to suit your overall look. You can then choose your colouring options like those mentioned above.

If you want that perfect image, full colour photographic images are also available but quite expensive. Pricing on custom dichroic images varies on the number of colours and accuracy of the image.

The options are many and can involve a significant investment. An example of a recent project is a Stained Glass Window. This can be done with a five part pattern, five Permacolour filters and five luminaires. This totals about \$3,000. A similar look can be achieved with a single fixture, single pattern and a stippled colourizing glass for about \$600. The best effect would be with a single fixture and a three colour, custom dichroic pattern for about \$1,600. You can see that the options are many and can involve a significant investment.

A small tip.....if you are doing this and find the luminaire you are using doesn't seem to be projecting a clear image just drop in a "Donut". This is a piece of black sheet metal that fits in the colour frame holder with a hole cut in the middle of it the same size as the pattern. This will greatly improve the clarity of your image.

Good luck and happy lighting.

Light Bulb Jokes



Q: How many doctors does it take to screw in a light bulb?

A: Three. One to find a bulb specialist, one to find a bulb installation specialist, and one to bill it all to Medicare

Q: How many cops does it take to screw in a light bulb?

A: None. It turned itself in.

Q: How many lawyers does it take to change a light bulb?

A: How many can you afford?

Q: How many professors does it take to change a light bulb?

A: Only one, but they get three tech. reports out of it.

Q: How many `Real Men' does it take to change a light bulb?

A: None: `Real Men' aren't afraid of the dark.

A': None of your business!

Q: How many `Real Women' does it take to change a light bulb?

A: None: A `Real Woman' would have plenty of real men around to do it.

Q: How many Federal employees does it take to screw in a light bulb?

A: Sorry, that item has been cut from the budget!

Q: How many board meetings does it take to get a light bulb changed?

A: This topic was resumed from last week's discussion, but is incomplete pending resolution of some action items. It will be continued next week. Meanwhile...

Q: How many consultants does it take to change a light bulb?

A: We'll have an estimate for you a week from Monday.

Q: How many Taoists does it take to change a light bulb?

A: You cannot change a light bulb. By its nature it will go out again.

Perspectives

ASHRAE/ IESNA 90.1-1999: The New Standard for Energy Conservation

Adapted from Energy User News

The new ASHRAE/ IESNA 90.1-1999 standard has been simplified in order to improve compliance and save energy. The new format makes it ready for the code market. Therefore practitioners and facility managers should become familiar with it.

Changes in the Document

The latest version represents a complete revision of ASHRAE 90.1 1989. One major change, writing the standards in code language, makes the revised standard suitable for adoption into provincial codes for enforcement.

The lighting section has also been revised. Changes in this section are intended to encourage energy conservation, primarily by requiring the use of lighting controls and creating total building wattage limitations. Both interior and exterior applications are included. These revisions include:

- Interior lighting control requirements are designed to ensure that lighting is turned off when facilities are unoccupied (except where safety or security is involved), primarily through programmable building lighting controls and occupancy sensors.
- Exterior lighting control requirements are designed to ensure that the lights are off during daylight hours, primarily through photosensors.
- There are individual manual control requirements for accent, task, and demonstration lighting. The connected power associated with the following lighting equipment is not included in calculating the total connected lighting power:

1. Specialized medical, dental and research lighting.

2. Professional sports arena and playing field lighting.
3. Display lighting for exhibits galleries, museums, and monuments.
4. Guest room lighting in hotels, motels, boarding houses, or similar buildings. Such spaces are required to base one master control switch at the main room entry that is capable of turning off all the lighting in the room.
5. Emergency lighting automatically off during normal building operation.

The standard specifies limits on the total wattage used for lighting throughout a building by establishing a total lighting power allowance, determined in either of two ways:

1. Building area method: Building square footage times total lighting watts per square foot specified for that building type (tabled information). Total wattage may be used at the lighting designers discretion.

2.Space-by-space method: Wattage for each individual space is allowed to build a total lighting wattage budget. This budget can be used as the lighting designer chooses.

Additional lighting power is allowed for decorative lighting, luminaires designed to minimize glare on VDT screens, and retail accent lighting. If this lighting equipment is not installed, no additional power is allowed. The standard also specifies limits on the total wattage used for exterior building entrance and exit lighting by establishing a total exterior lighting power budget. This is determined by totaling the lighting power allowed for all exits, entrances, and canopied areas of entrances. This budget can be used at the lighting designer discretion.

Additional lighting power is allowed for facade lighting. This power budget is based on the total area of the exterior building surface being illuminated. It is not part of the total exterior lighting budget and is only allowed if facade lighting is installed.

Under the IECC-2000, there are exceptions to exterior lighting restrictions where approved for historic, safety, signage or emergency considerations. Building grounds luminaires operating at greater than 100W must base a minimum efficacy of 60 lumens per watt, unless controlled by a motion sensor. To meet these requirements, all dusk-to-dawn building grounds lighting greater than 100W would have to contain a high-pressure sodium, metal halide or fluorescent light source.

ASHRAE/IESNA 90.1-1999 covers the building envelope lighting, power and HVAC. As currently written, the document offers only minimum energy standards. Consequently, property owners and their design professionals are urged to exceed these minimums to create more productive, profitable and comfortable environments.

British Columbia. The new firm will operate in association with Douglas Welch Design Associates Ltd., an established theatre consulting company with over 18 years experience.

Principals Douglas Welch and Galina Zbrizher, both internationally known award-winning designers, have combined their extensive individual architectural and entertainment lighting design experience to provide lighting design services that are imaginative, functional and architecturally sensitive

Douglas Welch + Galina Zbrizher Associates can be contacted at
T: 604-874-0552; F: 604-874-0557

The Power of Lighting

Lighting Videoconferencing Spaces
Adapted from Craig Dilouie

Virtual reality, virtual officing - these are just two trends accelerating the high-tech world we work in. We can even have virtual meetings. But most importantly, videoconferencing saves corporations money by slashing travel and increases productivity by saving time. Videoconferencing is growing by leaps as prices come down and user cost savings go up. And with the delicate lighting requirements posed by this application, lighting professionals with the right savvy can enjoy a virtual increase in business by tapping this emerging market.

Most issues involving quality lighting deal with how effective an environment is in creating the desired visual sensation. With videoconferencing, there is little room for compromise. While the human eye is able to adjust to light levels from less than a tenth of a foot-candle under moonlight up to 10,000 fc under sunlight, the videocamera's electronic "eye" isn't nearly as forgiving. An inappropriate lighting design that fails to meet the delicate demands of the

News Updates

**Attention IES Golfers –
First Annual IES Golf
Tournament** (in partnership with ASHRAE.)



- Location : Morgan Creek
- Date: Thursday 31 May.
- Cost: \$110 - includes green fees, cart rental, lunch, dinner and prizes
- Details: We will be joining with the local ASHRAE section that has allocated 20 spots to IES members.

If you are interested, please register with **Ray Denby (528-1453)** by **May 1-st**

so we can confirm our involvement with



We are pleased to announce the formation of **Douglas Welch + Galina Zbrizher Associates** a professional, full service lighting design firm based in Vancouver,

videoconferencing environment will create a poor image for the communicator as translated by the electronic eye, defeating both the purpose and the investment in expensive technology.

Chris Ripman, of Ripman Lighting Consultants of Belmont, MA, identifies four major issues to consider when lighting a videoconferencing facility, in addition to the criteria of standard lighting practice, and notes that these issues should transcend lighting into interior design as well.

1. How the space is used. Is the communication interactive and intimate, or primarily one-way (training, for example)? What is the maximum number of conferees in a typical session? Consider other uses of the room, keeping in mind that most videoconferencing rooms also serve non-videoconferencing uses.

2. Light levels and quality. Our challenge is to add depth and dimension to what is translated by the camera into a two-dimensional image. Flattering vertical illumination must be provided on the faces of conferees. Background surfaces within the camera's field of view must be appropriate in detail and texture as well as appropriately lighted. 5-10 fcv is usually sufficient for the camera to pick up a single face, but 50-70 fcv may be needed to create sufficient depth of field to capture all conferees in a large room. Conferee/background brightness ratios should be kept between 3:1 and 5:1. Lighting sufficient for videoconferencing requirements will usually provide adequate illumination for horizontal tasks on the table surface such as reading and writing. Control over color balance is easily achieved with today's video technology, so the designer can use any color temperature desired. Experience shows that 3500K fluorescent lamps combine well with halogen to create color contrast in the transmitted image.

3. Brightness and glare. The most common enemy for both the human eye and the camera's eye is direct disability glare. Even relatively low-brightness sources such as

fluorescent can cause a problem if they fall within the camera's field of view because they affect the automatic exposure balance of the recorded image.

4. Lighting equipment. Indirect fluorescent powered by high-frequency dimmable electronic ballasts are found to be well-suited for ambient lighting and wallwashing, and can be an excellent glare-free source for definition of the conferee when complemented by point sources used for key lighting. The dominant vector of lighting on the face should come from both sides of the face at an approximate 45-degree angle in both plan and a 60-degree angle in section (or greater). Parabolic fluorescent downlights can be used, especially where room layout is flexible, though the inclusion of indirect lighting generally enhances the space for the occupants. Shielded fluorescent sources can be placed in the conferee's field of view, if desired, with minimal glare due to the source's relatively low surface brightness.

PAR and MR16 lamps are ideally suited for key lighting, which defines the conferee's silhouette, adding dimension, depth and separation from the background, as well as desirable sheen and highlights to the conferee's hair. Lighting from directional sources such as these should never fall on the camera lens directly.

Multiple layers of lighting can be controlled by preset dimming systems or a series of manual controls. The preset system affords maximum user ease and permits instant access to the full range of lighting scenes that may be required during a videoconferencing session - such as AV projection, conferee presentations, videoconferences and standard meetings. Preset camera control systems (tilt, pan, and zoom) are also available, and can be interfaced directly with the lighting control system.

"Videoconferencing facilities are intensive, demanding multitask environments," said Ripman. "As such, they present the lighting

designer with a challenging set of problems and limitations and a rewarding opportunity to make a significant contribution to the quality of communication. The easier technology is to operate, the more it becomes transparent, receding into the background and leaving the user empowered to communicate effectively, supported rather than hampered by the environment."

Educational Program Update



In today's competitive business environment, it pays to invest your time to improve your skills and remain marketable. The BC Section of Illuminating Engineering Society offers several levels of lighting education to help you stay ahead of the competition.

ED100 Introductory Lighting Course: In this course, you will learn about the basic principles of lighting fundamentals. This course has been taken by thousands of individuals throughout North America who have had a professional need to enhance their lighting knowledge. Over the past few years, the B.C. Section has had over 500 people complete this course.

The next ED 100 will be held in early fall, near the end of September.

ED150 Intermediate Lighting Course: The next step to increasing your lighting expertise is to enroll in this intermediate lighting course. This course will promote personal growth and competence in lighting principles, enable you to network with industry experts. This course is presented in three segments. Students may take any of the segments, but must pass all three before receiving a certificate. ED 150 is held in three segments, these segments can be taken in any order but all three must be completed to receive a certificate.

ED 150 -Segment 1 was held in one evening a week starting February 12th and Segment 2 will be completed by April 30th. We hope to

complete Segment 3 before the summer.

Anyone taking this course should have previously taken the ED100 Course or have an number of years in the lighting industry.

The registration forms for these courses are on the IES BC Section website or you can call Kay Ferguson at 925-2464 (or 526-7717) for further information or to have a registration form sent to you.

Last hour news

Congratulations to all entrants for proudly representing British Columbia in the IIDA 2001 Awards Program.



Section Awards will be presented at the BC Section Vision Award Event to be held June 14th. The Edwin F. Guth Awards of Merit and EPRI

Awards have been obtained upon advancing to the Regional IESNA Judging.

- **H2O+ Store, Vancouver** - Galina Zbrizher (formerly with Reid Crowther & Partners), Philip Gowland and Brent North (Architectura) - *Section Award, Edwin F. Guth Award of Merit and advances to international judging*
- **Burnaby Mountain Secondary School** - Jim Jay and Dean Kaardal (Stantec Consulting Ltd.) - *Section Award*,
- **Thompson Community Centre** - Cristian Suvagau and Roy Hughes (BC Hydro) - *Section Award, Edwin F. Guth Award of Merit*
- **Richmond City Hall** - Michael Graham (R.A. Duff & Associates Inc.) - *Section Award, Edwin F. Guth Award of Merit*

- **NISGA'A LISIMS Government Building** - Michael Graham (R.A. Duff & Associates Inc.) and Roberto Pacheko (David Nairne & Associates Ltd.) - *Section Award*
- **Moose Creek Village, at YVR** - Michael Graham (R.A. Duff & Associates Inc.) and Carol Curren (Architectura) - *Section Award, Edwin F. Guth Award of Merit*
- **Vancouver City Council Chambers** - Paul Hodson and Douglas Welch (Douglas Welch Design Associates Ltd.) - *Participation Certificate*
- **Coastal Forest Thematics Area at YVR** - Douglas Welch and Paul Hodson (Douglas Welch Design Associates Ltd.) - *Section Award, Edwin F. Guth Award of Merit and advances to international judging*
- **Pender Place** - Edith M. Wormsbecker, Ken Bunn (MCM Interiors Ltd.) and Galina Zbrizher (formerly with Reid Crowther & Partners) - *Section Award, Edwin F. Guth Award of Merit*

The International Judging takes place at Lightfair International in Las Vegas, May 30 through June 1, 2001.

For more information regarding participation at the BC Section Vision Awards gala please call Darren Luce at (604) 473-2323.

Making E-contacts

Welcome to the "brave new world" of lighting over the internet Wonder what the lighting industries around the world are up to? Check these sites up:

www.lighting.com

Easy name and efficient searching and news tool for the lighting professionals. It's well worth trying it..

www.lightforum.com

The "self-proclaimed" resource Center and Reference Library for the lighting industry; not bad....

www.lightresource.com

Another "hot site" for international lighting references, that you may find useful.

www.northwestlighting.com

You should definitely bookmark this site of the Seattle Lighting Design Lab, the premier lighting center in the Pacific Northwest region.

IES - BC Staff Box

President	Carl Koehler
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Secretary	Peter Franck
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IIDA & Vision Awards	Darren Luce and John Baron
Historian & Webmaster:	Roy Hughes

Members at large

Gerry Henderson, Betty Lou Pacey, Mike Graham, Bernard Crocker and Greg Yellenik.

For more information or applications forms please contact: Corbie Black at (604) 273-7732

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

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