

LUMINOUS SPEC

SUMMER 2016

“.....learn from nature
and apply it to the way
we design”

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FEATURED PROFILE

Nancy Clanton

Lighting artistry
shaped by science

Nancy Clanton, President of Clanton & Associates in Boulder, Colorado, earned an architectural engineering degree with an illumination emphasis at the University of Colorado when lighting design as a career was in its infancy. She recalls that it was a different and valuable approach to engineering education, incorporating how the eye works, and the psychology of light, so that the emphasis was on lighting for people and visibility instead of lighting for numbers.

Why is sustainability and regeneration important to you?

It's always been important to me, it's at my core. In the 80s, I was part of the team responsible for greening the White House, along with Francis Rubenstein and Hayden McKay. That's also when the public movement towards green gained momentum. As part of that, we knew that daylighting, or first generation light from the sun, was huge. Back in the 30s and 40s and before then, all buildings were day lit; they had the right idea, and we need to bring those buildings back to their initial glory. Daylighting and electric lighting are intertwined; one cannot be designed without the other. And now, so much knowledge is coming out about circadian rhythm and the effects of light on our hormones, and our well-being. We've known about that for a long time, now it's narrowing down to exact nanometers, and wouldn't you know, those same nanometers also contribute to sky glow. Sustainability is also about our environment; light's ecological impact is huge. We know that along with sky glow, blue lighting affects animals and insects and plants, so we need to learn from nature and apply it to the way we design. For example, if we're in a fly zone, don't uplight a bridge during migration season. Let's pick up on nature's clues and use dynamic lighting to respond to them. That's the ultimate sustainability, working with nature instead of in ignorance of it.

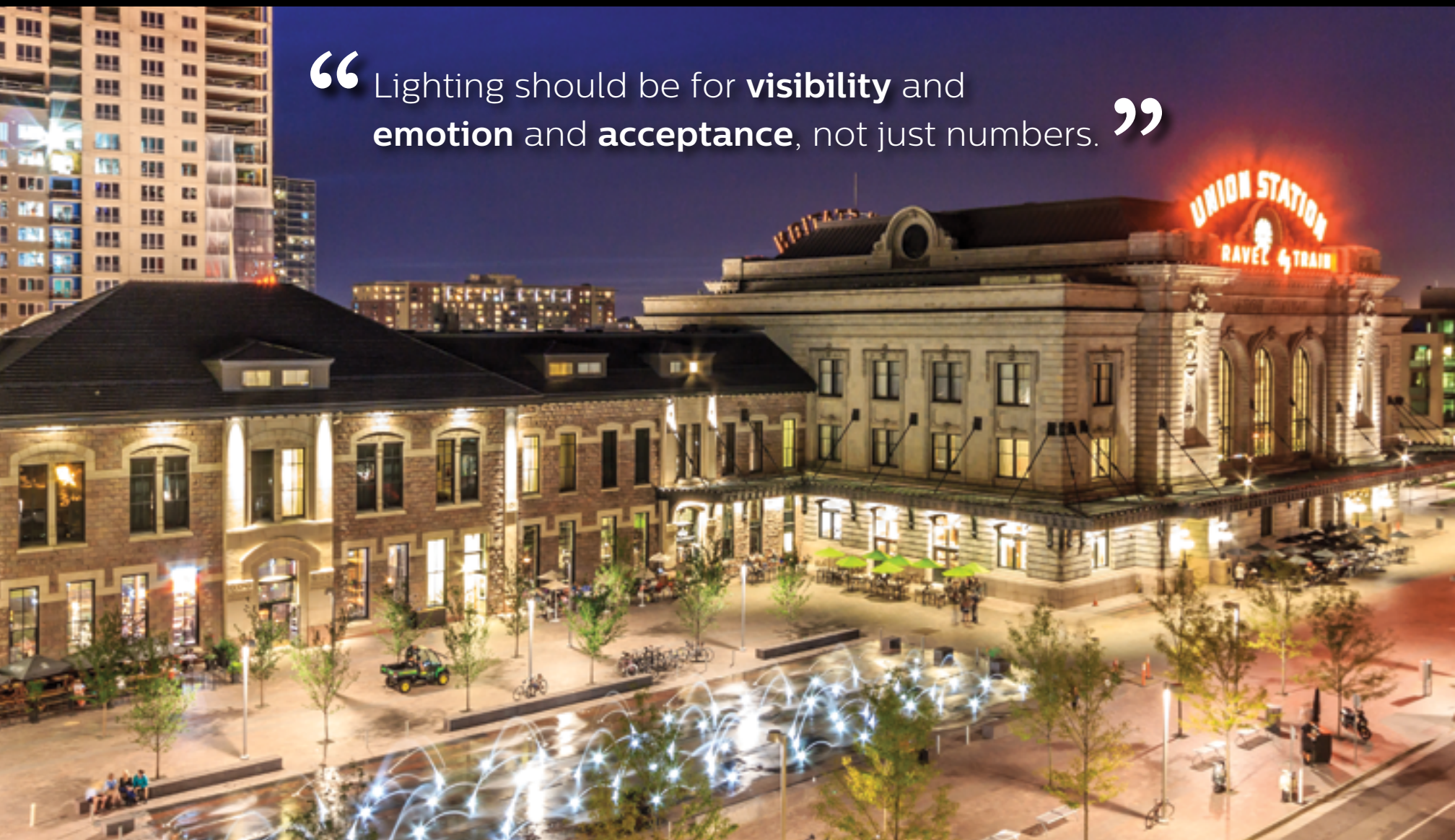


Lighting designers often work with architects, engineers, and others as a team effort. What is important for these external team members to know when it comes to lighting design?

With a lot of projects, the building comes first; but instead, let's start from the user and work backwards. Lighting should be for visibility and emotion and acceptance, not just numbers. Let's look at important user attributes: qualities like day light equity, where everybody gets daylight, or flexibility equity to adjust your environment, whether it's thermal or acoustic or lighting. Once that's nailed down, give us the opportunity to light the architecture or beauty of the space, and then everything else falls into place. Ambient lighting should be separated from personalized lighting. There tends to be too much demand on one type of light to provide ambient lighting and task, or more accurately, personalized lighting; they should be separated. Personalized lighting is for you to light interesting things, and you can adjust the level to what you want. Difficulty in a project arises when there are separate teams for core and shell, and furniture, fixtures and equipment (FF&E) because the lighting doesn't get integrated. I'd love to see architectural lighting designers drive personal lighting and work with interior designers all the way through so that everyone, the teams, owners and tenants, can see the balance of light and layers of light.



“ Lighting should be for **visibility** and **emotion** and **acceptance**, not just numbers. ”



In your presentation, ‘Tale of Four Cities’, you talk about contrast-based criteria in outdoor spaces. Would you please explain this, and why it’s different, and preferable to, uniformity criteria?

Contrast is how we perceive an object against different uniformity or brightness backgrounds. I did a contrast experiment as part of lighting training for the Navy Anti-Terrorism Team. Actually, we tried to break into buildings at night – it was terrifying! But, it was a controlled scenario, and was meant to report on security breakdowns. The highly secure buildings were concrete, with concrete sidewalks, and what color did the team wear? Black, as one would naturally assume. The squad commander and I both wore white or khaki, and no one could see the two of us against all that concrete. We’ve found in our studies, including the ‘Tale of Four Cities’, that color has a tremendous effect on contrast, even with people who are chroma-challenged or color blind. We’re not to the point where we have definitive answers yet, but I can tell you that, for example, you can see yellow from anywhere. In fact, it caused problems in one of our experiments because people could see it in the next sequence, ten blocks away. We also found that the more non-uniform the lighting, the faster objects were detected; we kept dimming the lights, hoping to jump off that plateau of visibility, but instead we kept skirting across the top, even down to the 25% lighting level. Our research indicated a need to change from vehicular-centric to pedestrian-centric lighting, because the darker the street in a high ambient area, the better

people can be seen. We could see so much better if we had darker streets and brighter sidewalks. I’m also a firm believer that we should look at semi-cylindrical illuminance instead of vertical or horizontal, at least when it comes to pedestrians and crosswalks. Vertical is too two-dimensional, where semi-cylindrical picks up reflected light coming from different directions. With the new perspective of contrast-based metrics and more empirical data, we can all have a greater understanding.

Could you please describe a project of yours that stands out in your mind as particularly memorable?

About four years ago, we worked on the interior of the US Green Building Council Headquarters in downtown Washington D.C. There were a lot of constraints in the project, they couldn’t change their building or add light shelves. So the question was, how can we get daylight in there? Dean Sanders in our office came up with the idea of using the perimeter walkway, around the walls, as a light shelf, with a light carpet. It worked so well. We also added IP addressable controls to lower ambient lighting, and separate ambient lighting from personalized lighting. The watts were calculated to be 0.4 sq. ft., and in reality, they’re running at 0.1 sq. ft. That’s huge. They were a great client to work with, they did surveys and post-occupancy evaluations, and we all learned a lot from that.

What do you envision when it comes to the future of lighting and the intersection of lighting and technology?

Going back to the person and the user, lighting is for them first. And smart phones and locators will be a huge enabler. Cars don’t need outdoor lighting as much as pedestrians do, so we need to think pedestrian-centric. Maybe we can have an app on our phones that work with lighting embedded in the pavement to guide you to a destination or announce where a crosswalk or hazard is, or indicate a change in elevation; that could be good for people with low vision and everybody else. Indoors, my dream is to get a blind system that follows the sun. They work with your smart phone to understand where you are in the space and float around the window, not just top-down or bottom-up, to keep direct sun out of your line of vision. The building knows where we are every minute of the day if we keep our phone with us. Let’s use that to really get the most out of the daylight. There’s so much we can do.

Images used in this profile are as follows:

*Denver Union Station – Denver Colorado (cover & pg 3)
Photographer: Ryan Dravitz, Ryan Dravitz Photography*

*14th Street Improvements – Denver, Colorado (pg 2)
Photographer: Robb Williamson, Williamson Images*

*Boulder Junction – Boulder, Colorado (pg 2)
Photographer: Gregg Adams, Clanton & Associates, Inc.*

PROJECT SPOTLIGHT

DYNAMIC LIGHTING TREATS TRAVELERS TO A LIGHTING EXPERIENCE

The San Diego Trolley Station bustles each day with commuters traveling to and from work and tourists out and about seeing the historical sites of the city. Unlike typical dim and dismal public transportation stops, this station is adorned with a distinguishing feature—a stunning canopy of steel girders and opaque glass designed by acclaimed architect, Helmut Jahn. The canopy was originally lit with metal halide fixtures that did not provide adequate light for the space below, resulting in safety and security concerns. The maintenance of the fixtures was both labor and cost intensive and the lights could sometimes run for up to 15 hours resulting in expensive electric bills.

Lighting designers, Rebecca Ceballos and Debra Fox of LPA, Inc., were commissioned with the design objective: improve the light levels and light uniformity, increase safety, and reduce the maintenance and energy costs.

“As we worked on the project we realized that through the use of color-changing lighting, we had the chance to essentially brand the city,” said Fox. “The new lighting could extend beyond the station and tie back to city events and happenings, and with the nearby commercial railroad station, we could create a ‘gateway’ to San Diego.”

To uplight the canopy, Ceballos and Fox used a combination of four Philips Color Kinetics ColorBlast Powercore and two iW Blast Powercore fixtures. More than 30 different themed lighting shows were programmed—both static and dynamic—and run during trolley operating hours treating travelers and passersby to a lighting experience. After hours, the uplights switch to white light in order to increase safety and security in the area. The new lighting system has reduced the overall energy consumption by 80%.

Visit <http://applications.nam.lighting.philips.com/blog/> to learn more.



Photos: Juan Ceballos and Debra Fox



AROUND THE WORLD

ICONIC 400-YEAR OLD BRIDGE GETS A LIGHTING MAKEOVER WHILE PRESERVING ITS HISTORICAL FEATURES

Philips Lighting partnered with the Governor's office of Edirne to light a historical monument as part of an initiative to enhance the identity of cities in Turkey. The project revealed the architectural details of the bridge accurately with no damage to its historical features. The connected lighting system from Philips was installed with no screwing or drilling activities, thus preserving the structural integrity of the bridge. Furthermore, the LED light fixtures were specially selected for their weather-proof qualities, and resistance to floods and inundations.

“The preservation of historical monuments that are cultural assets should not be seen as the responsibility of conservation specialists alone. At Philips we believe that we can add a far wider dimension to the concept of preservation by infusing

life into monuments with light and drawing on the contribution of townspeople.” said Özge Süzen, Marketing Director for Philips Lighting in Turkey. “We would like to thank the Office of the Governor of Edirne for their support in managing the process and their appreciation of the role of light to help preserve and enhance our cultural heritage.”

The lighting was installed to bring the arches into the foreground as the most important architectural feature of the bridge. The inner and outer dome of the Kitabe Pavilion in the middle of the bridge was also illuminated to further highlight the cultural and historical value of the bridge. The LED lighting system offers a palette of rich colors with which to light the pavilion and the arches.

For further information, please contact Ebru Bilge, Philips Turkey, at ebru.bilge@philips.com



PRODUCT NEWS



Above all, maximizing efficiencies with light

Philips Lumec **HighFocus LED high mast luminaires** help to reduce lighting-related energy costs compared to HID technologies while meeting code requirements, and its long life, backed by the luminaire useful life data, means that maintenance time and related costs are also reduced. HighFocus LED is the high performing, low-maintenance high mast solution (with up to 103 lumens per watt and 32,000 – 97,000 delivered lumens) that provides managers and work crews with the freedom to focus on other tasks.

Visit www.philips.com/highfocus to learn more.



Your ultimate landscape lighting chameleon

As an industry, we know that landscape lighting is meant to draw attention to interesting outdoor elements, not the luminaires themselves. We can help you to achieve this goal with convenient, multi-tasking Philips Hadco **FlexScape LED accent and inground line-voltage** landscape luminaires. FlexScape delivers powerful luminaire performance in a small form factor that integrates seamlessly throughout your commercial landscape projects. With the unique convenience of field-adjustable beam patterns and lumen outputs, you can easily adapt the lighting at any time, and for any reason.

Visit www.philips.com/flexscape to learn more.



The next generation in architectural and landscape lighting

The Philips Color Kinetics **ColorBurst Powercore RGBW generation 2**, will put more precision and control into your hands with a newly redesigned optical system that improves light quality in each fixture. Gain color consistency with standard format architectural and landscape fixtures to deliver full-color output of up to 1,293 lumens to support a range of dynamic up-lighting and decorative lighting applications.

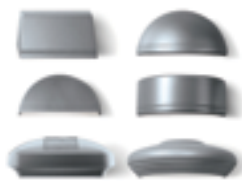
Find out how you can design breath taking outdoor scenes for your customers at bit.ly/ColorBurstPowercore-RGBW



One simple installation. Infinite ways to make an impression.

Philips and Tandus Centiva Carpets have partnered to design an LED enhanced commercial carpet that provides a durable, stylish flooring solution that fits seamlessly into your building architecture and interfaces with most building management systems. Want to make your mark on visitors and guests? Philips **Luminous carpets** let's you welcome, attract, and guide people with dynamic moving messages and images by a simple touch of your smartphone or tablet. Your floor is now a tool for informing and inspiring people.

Visit www.luminous-carpets.com/usa to learn more.



Traditional styles meet advanced performance

Philips Gardco **LED wall sconces 100 line** are now available with enhanced performance, and energy saving control options. The wall sconces 100 line feature compact designs that provide wide flexibility in high performance illumination, while providing new opportunities to make a sustainable architectural statement. By incorporating cutoff performance, usable illumination patterns, and powerful wattages into compact and architecturally pleasing designs, the wall sconces 100 line provide a much-needed alternative to glare-inducing wall packs.

To see the multiple styles offered, visit www.philips.com/luminaires.



Top to bottom advantage

The Philips Day-Brite / Philips CFI **LED linear suspended LBX** luminaire is offered in five different configurations (in four and eight foot units) to provide the right amount of light in any application whether it is retail, industrial, or commercial. Delivering up to 150 lumens per watt, design spaces for retailers that strike a balance between encouraging customer spending, protecting profit margins, and achieving success in highly competitive environments. Configure the LBX with optional dimming and occupancy sensors to help your industrial customers to reduce energy costs and light areas where accuracy in pulling products or goods from warehouse shelving is critical.

Visit www.philips.com/LBXlinearsuspended to learn more.



Create awe-inspiring outdoor lighting

The Philips Color Kinetics **ColorBurst IntelliHue Powercore**, provides color-changing and high-quality white light from the same fixture. The IntelliHue is an advanced approach to color mixing that enables high-quality intelligent color and white light from a single fixture. Multiple channels of LED light sources combine to produce a full spectrum of precisely controllable light, including millions of saturated colors, pastels, and uniform white light with CRI of greater than 83 in the 2700K to 4000 K range.

Find out how the ColorBurst IntelliHue Powercore, is perfect for your next awe-inspiring outdoor wall washing and spot lighting application at bit.ly/ColorBurstPowercore-Intellihue.



Power and savings, just the way you like it

High output lighting doesn't have to mean high energy and maintenance costs. Philips Gardco **PowerForm LED site & area and floodlight luminaires** provide your outdoor area with bright, uniform illumination while slashing energy and maintenance costs compared to traditional lighting technologies. Now you can instill a sense of security and attract attention in any large area or floodlighting applications without the hassle of frequent relamping or high utility bills. A wide variety of sizes, optical distributions, mounting options, and industry-leading lumen output ranging from approximately 20,000 to 100,000 lumens offer increased flexibility without under- or over-lighting the space.

Visit www.philips.com/powerform to learn more.

EDUCATION

Lighting Application Center



Whether you're new to the industry, or want to learn additional skills, the Philips Lighting Application Center offers a variety of courses in the United States and Canada for all levels.

Visit www.philips.com/lighting/education to find additional information about the Lighting Application Center's programs or please write to us at lightingapplicationcenter@philips.com to arrange a customized visit.

Specifier Seminar

SYNOPSIS: Lighting trends & technology update

These two- and three-day seminars focus on lighting trends, as well as the latest technologies for both outdoor and indoor applications. With a variety of topics, attendees are able to earn over five hours of Continuing Educational Units (CEU) and AIA Learning Units.

LOCATION: Somerset, New Jersey

DATES: June 8-9, 2016
August 31-September 1, 2016
December 6-8, 2016

- The *December* seminar will offer an additional day. Participants are treated to a special viewing of the Times Square Ball in New York City where Philips Lighting has been a corporate sponsor for over 16 years.

REGISTER: Visit www.philips.com/lighting/education

(All that wish to enroll must first register as a new user and establish an account.)

Workshops

Lighting Excellence Workshop

SYNOPSIS: These two-day advanced workshop provide an up-close and hands-on approach to the design and manufacturing of Philips indoor (Tupelo, Fall River) and outdoor (San Marcos) luminaires, with the focus on key LED products for commercial and industrial applications within their respective brands.

Earn a minimum of 2.0 Hours of AIA/LUs/CEUs for attending.

LOCATION/DATE: Tupelo, Mississippi, May 11-12, 2016
Fall River, Massachusetts, July 12-13, 2016
San Marcos, Texas, November 9-10, 2016

REGISTER: Visit www.philips.com/lighting/education

(All that wish to enroll must first register as a new user and establish an account.)

Lighting Fundamentals Workshop

SYNOPSIS: This workshop offers a practical understanding of the principles of lighting and an introduction to today's lighting technologies, including sources, luminaires and controls.

LOCATION: Somerset, New Jersey

DATES: May 23-26, 2016
July 18-21, 2016

REGISTER: Visit www.philips.com/lighting/education

(All that wish to enroll must first register as a new user and establish an account.)

Lighting Systems Workshop

SYNOPSIS: At the completion of the workshop, participants should be able to:

- Identify the benefits of specific optical systems and construction
- Assess key luminaire and control performance attributes
- Evaluate control systems in terms of project objectives
- Write "defensible" specifications

LOCATION: Somerset, New Jersey

DATES: June 21-23, 2016

REGISTER: Visit www.philips.com/lighting/education

(All that wish to enroll must first register as a new user and establish an account.)

Lighting Fundamentals Workshop

SYNOPSIS: The 3.5-day workshop offers a practical understanding of the principles of lighting and an introduction to today's lighting technologies, including sources, luminaires, and controls. We take an interactive, experience-based and participant-centered approach, using full-scale, hands-on demonstrations, and lots of practice. Participants see lighting in action, explore how lighting systems work, and measure and evaluate lighting alternatives.

LOCATION: Markham, Ontario, Canada

DATES: October 3-6, 2016

REGISTER: Visit www.education.lighting.philips.com/momentum

Lighting Application Workshop – Outdoor Application

SYNOPSIS: Participants observe lighting in action, measure and evaluate lighting alternatives, and practice applying the content. Lighting systems are considered as an integrated solution, including sources, luminaires, and controls.

LOCATION: Markham, Ontario, Canada

DATES: October 17-18, 2016

REGISTER: Visit www.education.lighting.philips.com/momentum

Lighting Application Workshop – Retail & Hospitality

SYNOPSIS: This two-day workshop addresses the principles and practicalities of integrated lighting solutions for specific situations. Topics include: Understanding and applying recommended practice; the critical qualities of light; illuminance selection; and an appropriate lighting systems.

LOCATION: Markham, Ontario, Canada

DATES: November 14-15, 2016

REGISTER: Visit www.education.lighting.philips.com/momentum

EDUCATION

Lighting Specialist Workshop

SYNOPSIS: Building on a basic understanding of lighting to address the critical issues in the experience, measurement and assessment of lighting and lighting systems. This workshop is aimed at the needs of those with two-to-five years of lighting experience and the desire to augment their lighting knowledge and know-how.

LOCATION: Markham, Ontario, Canada

DATES: December 5, 2016

REGISTER: Visit www.education.lighting.philips.com/momentum

LED Workshop

SYNOPSIS: This workshop is designed to give the participant all the tools to make an intelligent decision in choosing the correct LED for the respective application. While there is much talk about LEDs, there is a lack of knowledge with regards to this ever popular light source. We will explore the history of the LED, physical characteristics of a light emitting diode, effects that will limit an LED's effectiveness, LEDs in comparison to other available sources, as well provide a look into the future.

LOCATION: Markham, Ontario, Canada

DATES: December 7, 2016

REGISTER: Visit www.education.lighting.philips.com/momentum

Webinars

The future of lighting design and technology

SYNOPSIS: In this recorded episode, architectural author and editor Ruth Slavid interviewed three advanced lighting designers in London. The recorded video is separated into questions so you can identify the questions that resonate most with you and watch that part of the video.

REGISTER: Visit philips.com/lightinguniversity

Lighting Academy for you

Lighting Academy offers a comprehensive range of educational resources for people who want to expand their lighting knowledge. With a rich history in lighting, Philips is uniquely qualified to bridge the gap between the cutting edge in lighting innovation and the real-world solutions required by professionals.



The Academy partners with world-leading experts to provide you with up-to-date information and valuable inspiration. You will be sure to find something on this website that will enlighten you.

Visit www.philips.com/lightingacademy to see what training options are available.

TECHNICALLY SPEAKING



Are All BIMs Created Equal? A continuing dialog with Donna Gafford, LC, MIES, CM-BIM

As we discussed in that last installment of Luminous Spec, Building Information Models, commonly referred to as BIM, is increasingly used, but not all are created equally. In the previous issue, we learned the correct context of building in regards to BIM.

In the second portion of this three-part article series, we take a deeper look at the **Information** in BIM.

Information

Information embedded within the file is what makes BIM appealing. After all, this information is what makes scheduling, calculations, renderings, etc. possible.

In the past, scheduling was a grueling task. However, now we live in the age of intelligent projects that can do a lot of the work for you. This is made possible by the information embedded within BIM, including manufacturer, catalog/model number, product name, lamp type, etc. These bits of information are all important to a schedule, but not always included within every BIM. Quality BIMs won't leave you sifting through a pile of specification sheets; they will provide the information you need.

Calculations are another important part of designing a project, especially when it comes to lighting. Want to calculate electrical load? Voltage and input watts are needed. What about average estimated illumination? Now you need to know the total fixture lumens. It's quickly apparent how information embedded make these calculations possible.

Renderings are what make virtual seem like reality. When it comes to lighting, photometric files are a vital piece of information that make your space come alive. Utilizing a BIM which is missing vital information (including photometry) is like buying a car with no engine. While it may look great, you're not going to get very far.

Check out our next installment of Luminous Spec, where we discuss BIM in the context of Models, or contact us at design.resources@philips.com with your specific question.

NOTEWORTHY

Most Innovative 2016 Product of the Year goes to Philips Lighting

The LIGHTFAIR Innovation Awards honors industry innovations for lighting-related products and designs introduced in the past 12 months. Each product was judged by an independent panel of renowned lighting professionals.

This year, the panel awarded the Most Innovative Product of the Year to **Philips Gardco SoftView LED parking garage luminaire**. SoftView uses indirect illumination and uplight to reduce glare and eliminate the cave effect so that patrons can feel comfortably secure.

Visit www.philips.com/softview to learn more.



INDUSTRY NEWS

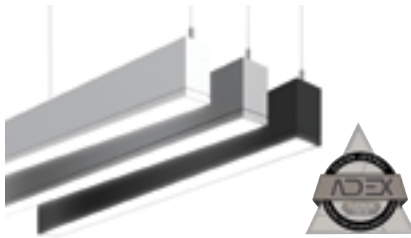
ADEX Winners Announced!

Sponsored by Designjournalmag.com, the Awards for Design Excellence (ADEX) is the largest and most prestigious awards program for product and project design in the architecture and design industry. The ADEX Award represents the best product and project designs of the year in the opinion of those who matter the most. Each category has potential for three award levels of platinum, gold or silver. Some of the winners are listed below:



Philips Lumec **SleekVision** and **ClassicStyle** post tops and bollards featuring **ClearGuide LED technology** have been awarded the ADEX Platinum award.

Visit www.philips.com/clearguide to learn more.



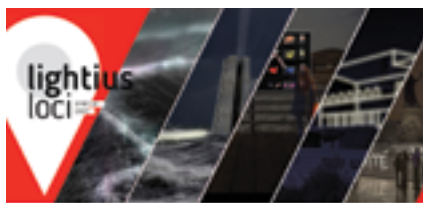
Philips Ledalite **TruGroove LED** suspended, wall and surface luminaires have won the ADEX Platinum award.

Visit www.philips.com/trugroove to learn more.



Philips Ledalite **FloatPlane LED** luminaires have won the ADEX Gold award.

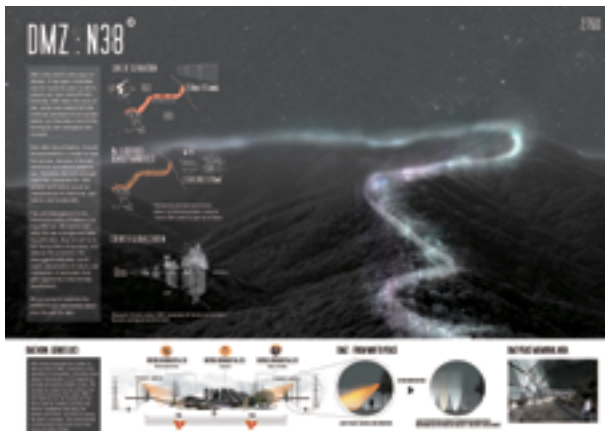
Visit www.philips.com/floatplane to learn more.



Winners of the CLUE Competition Edition 02 – Lightius Loci

The second edition of the CLUE International Lighting Design Contest invited participants to think about the spirit of a place where light does not escape the genius loci design principle. Candidates had to choose a place without limitation of scale, location, indoor or outdoor and provide a response in line with the local reality.

A total of 222 projects from over 50 countries were received and the jury awarded two prizes and three honorable mentions.



The **first-place** prize of \$5,000 went to **Mr. YeonHo Lee** from Seoul, South Korea and his team (WooSeok Jang, DongGyun Ha) for their project DMZ: N38°



The **second-place** prize of \$2,500 was awarded to **Mrs. Maria-Chrysoula Akrivou** from Athens, Greece and her team (Antonis Athanasiou) for Lightening a modern odyssey.

Three **honorable mentions** were awarded:



Project: Närvaro. **M. Christopher Calo** from California, USA



Project: Ab Aeterno. **Mrs. Irena Milojeska** and her team (Simona Tasevska, Hristina Sekuloska) from Republic of Macedonia



Project: Luminescent Memorium. **Mrs. Aurore Foray** and her team (Fanny Guigon, Giovanni Guillabert) from Montréal, Canada

Congratulations to the winners and thank you to all the participants for their creative and innovative lighting concepts. The next edition of the CLUE Competition is coming September 2016. Visit www.cluecompetition.com to learn more.