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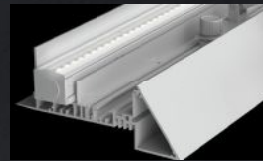




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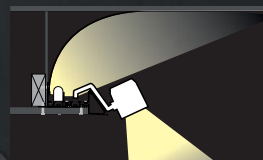
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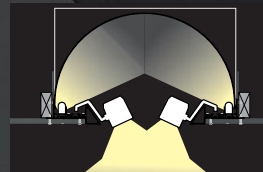
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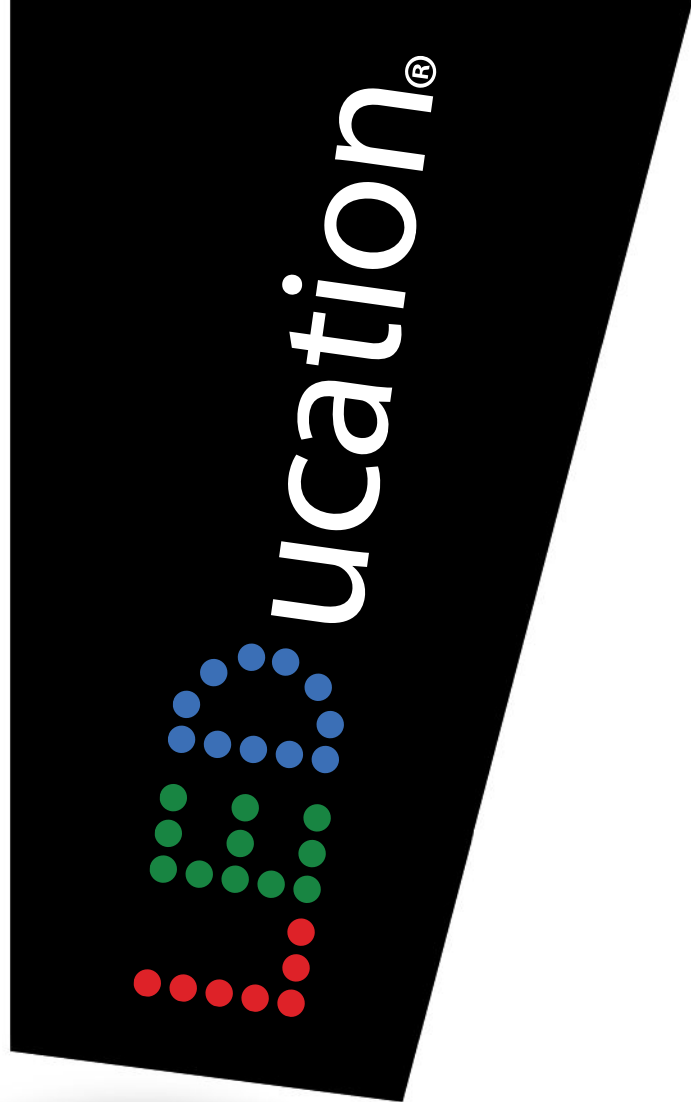


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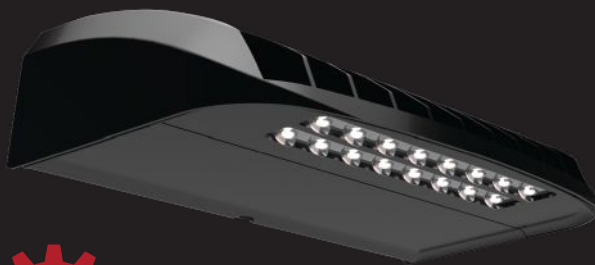
A·L ARCHITECTURAL LIGHTING (Vol. 31, No. 1 USPS 000-846, ISSN 0894-0436) is published six times per year (Jan/Feb, March/April, May/June, July/August, Sept/Oct, Nov/Dec) by Hanley Wood, One Thomas Circle, N.W., Suite 600, Washington, DC 20005. Periodicals postage paid at Washington, DC, and additional mailing offices. Printed in the USA. Postmaster: Send changes of address to ARCHITECTURAL LIGHTING, P.O. Box 3494, Northbrook, IL 60065. Canada Post Registration #40612608/GST Number: R-120931738. Canadian return address: IMEX, P.O. Box 25542, London, ON N6C 6B2.

Distributed free of charge to individuals or firms engaged in the specification of lighting products in the U.S. Publisher reserves the right to determine recipient qualification. Per year, all other U.S. subscriptions \$48; Canada, \$60; Foreign, \$96. Payable in U.S. dollars. For subscription inquiries, address changes, and single-copy sales (\$10 in the U.S., \$15 in Canada, \$20 for other countries, payable in advance in U.S. dollars) write to ARCHITECTURAL LIGHTING, P.O. Box 3494, Northbrook, IL 60065 or call 847.291.5221 or toll-free 888.269.8410. For reprints, call or email Wright's Media: 877.652.5295 or hanleywood@wrightsmedia.com.

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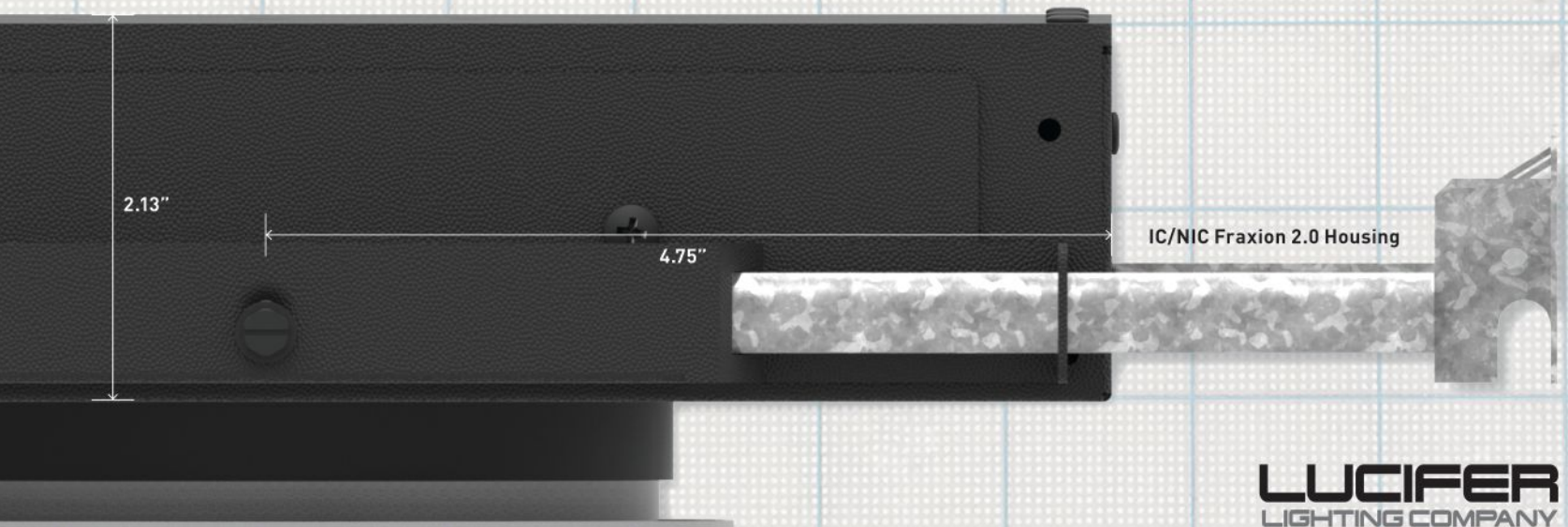
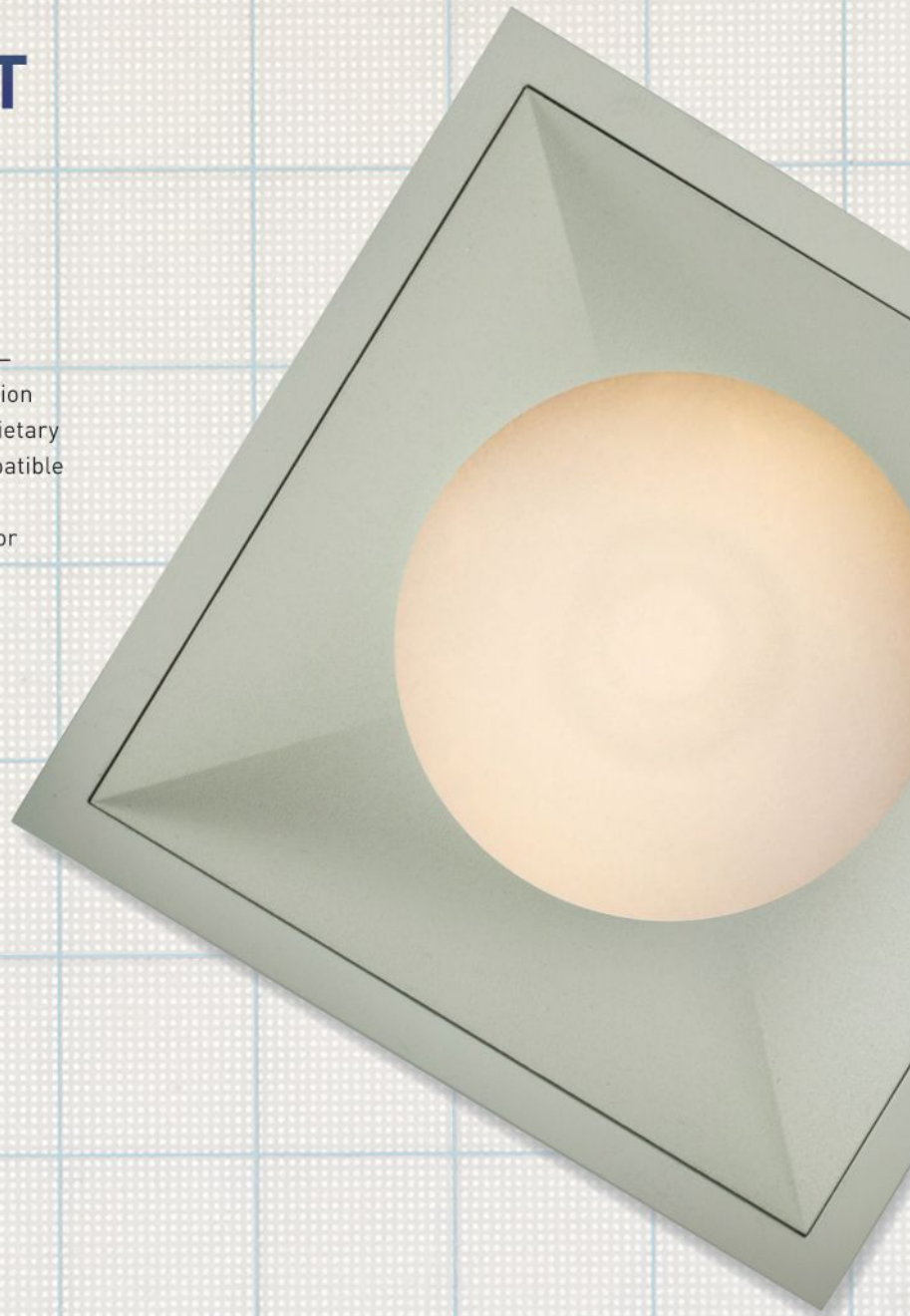
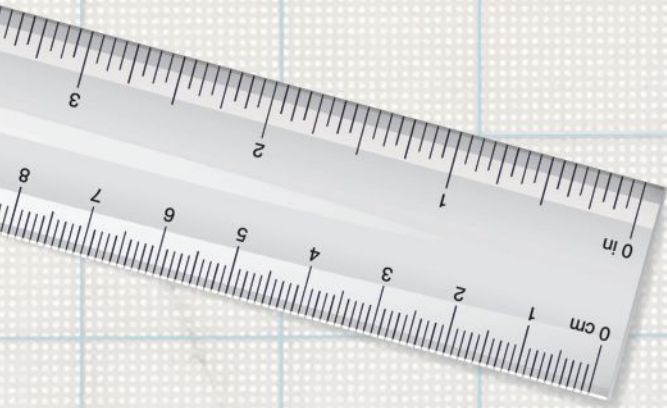
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FINDING A LIGHT IN THE DARK



For most of 2016, I had R.E.M.'s song "It's the End of the World as We Know It (And I Feel Fine)," from their 1987 album *Document*, stuck in my head. Anyone who grew up in the 1980s, as I did, with R.E.M. as part of their high school and college soundtrack will know that the song's lyrics are meant to be ironic. Nevertheless, I don't feel fine and I know from having spoken with many of you last fall, and especially since the U.S. election, that you don't feel fine either.

Politics is a tricky subject even in the best of times. So why broach it now? Because if the recent election has taught me anything, it is that we cannot be silent and wait for others to speak out. There is no place for language that promotes and encourages racism, anti-Semitism, sexism, homophobia, or xenophobia. No matter where you sit on the political spectrum, this kind of behavior is unacceptable and its outcomes hurt us all. It's unfathomable, and disheartening, that we should still be speaking out against such prejudices in 2017.

Over the past several months, the editorial teams at ARCHITECTURAL LIGHTING and our sister publication *Architect* have had a number of discussions about what role, if any, a business-to-business (B2B) publication should play when it comes to reporting and commenting on the political events of the day. Our approach has been to focus on matters that relate specifically to our audiences, subjects of concern such as energy and trade policies, and to never waver from our editorial integrity. In a time when fake news and "alternative facts" are rampant, responsible reporting takes on even greater import, no matter the journalistic outlet. And as President Donald Trump lashes out against the media, who's to say that B2B publications won't be in his firing line at some point?

There are a number of challenges ahead, such as how the global economy will respond. I can't think of an industry that has not embraced the postwar-era globalization. And with the shift to LEDs, the entire lighting industry is now reliant on electronic component manufacturers in Asia. Changes in trade policy could have a negative impact on this fragile international supply chain.

And what about science, technology, and research? By restricting certain populations from

entering the United States, we cut ourselves off from subject matter experts and hinder the research and development process.

Professional associations also face challenges as they represent their constituencies. After the presidential election, I reached out to both Marsha Turner, CEO of the International Association of Lighting Designers, and Timothy Licitra, executive vice president of the Illuminating Engineering Society of North America, to see if they were issuing a statement. Both Turner and Licitra offered essentially the same response—that neither organization comments on election outcomes. This is not surprising, but it is disappointing that at a time when lighting designers look to their professional organizations for leadership, their leadership remains silent.

Architects, on the other hand, have not been so quiet. The American Institute of Architects issued a post-election statement that said it would work with the new president, causing a huge uproar among its constituency and resulting in apologies and resignations.

One successful example of advocacy has been the formation of Architects Advocate. More than 500 architecture firms have signed an open letter petitioning President Trump to "enact meaningful legislation to mitigate climate change." Only two lighting design firms, as of now, have signed. Here is an opportunity for lighting designers to either form their own collective or to join with their architectural colleagues and as design professionals speak out about issues of concern.

We recently released our 30th Anniversary Issue, featuring "30 Moments in Lighting," which provides ARCHITECTURAL LIGHTING a foundation heading into 2017. And I wonder: Will #31 be the moment when the lighting community finally stands up and leads the conversation?

Elizabeth Donoff
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RIVER LIGHTS

On Dec. 7, London Mayor Sadiq Khan announced the winner of the Illuminated River International Design Competition—"Current," by light artist Leo Villareal and architects and urban planners Lifschutz Davidson Sandilands, who led a winning team that includes 12 additional consulting firms. The announcement ended a six-month process that invited proposals for light art installations on all of London's 17 central bridges along the Thames. In all, the competition received entries from 105 teams from around the world to the initial call for participation. From those 105, six were selected for the shortlist, and those projects were exhibited to the London public in November. According to the winning team's statement, "Current" aims to "integrate light and color ... creating a sensitive, interactive and site-specific interplay with the river." The project, estimated to cost £20 million, is being developed with stakeholders and the public, and is to be completed by the end of 2017. bit.ly/AL_Thames •

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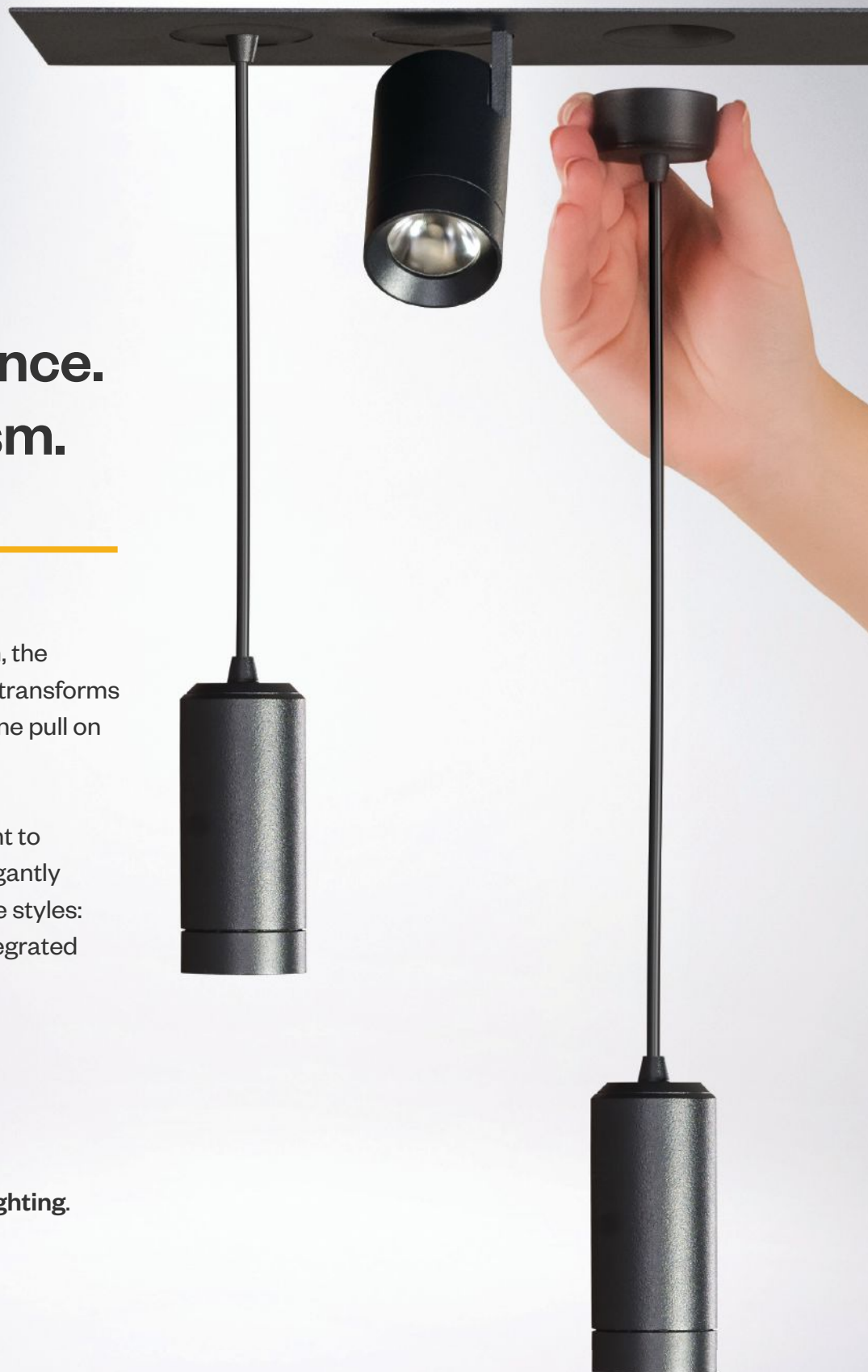
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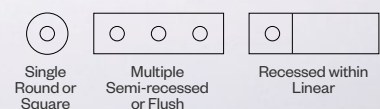
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THE PHENOMENOLOGY OF LIGHT—AND DARK

You Say Light—I Think Shadow (2014, Art and Theory Publishing) is a compilation of 109 original texts by leading designers in the fields of art, architecture, design, literature, film, theater, and photography on the subject of light and dark. The project was conceived and realized by Stockholm-based artist Aleksandra Stratimirovic and graphic designer Sandra Praun. Funding for the limited print run of 2,000 was made available by L-RO (Lighting-Related Organizations) as part of the UNESCO International Year of Light and Light Based Technologies 2015. Each of the entries incorporates a personal reflection by a noted designer. Stratimirovic and Praun weave the individual texts together in a specific order, and through a visually dynamic use of font, graphics, paper selection, and layout, they create a conversation between the participating designers and a broader dialogue with the reader about the intrinsic nuances of light as an artistic medium. bit.ly/AL_YSLITS •

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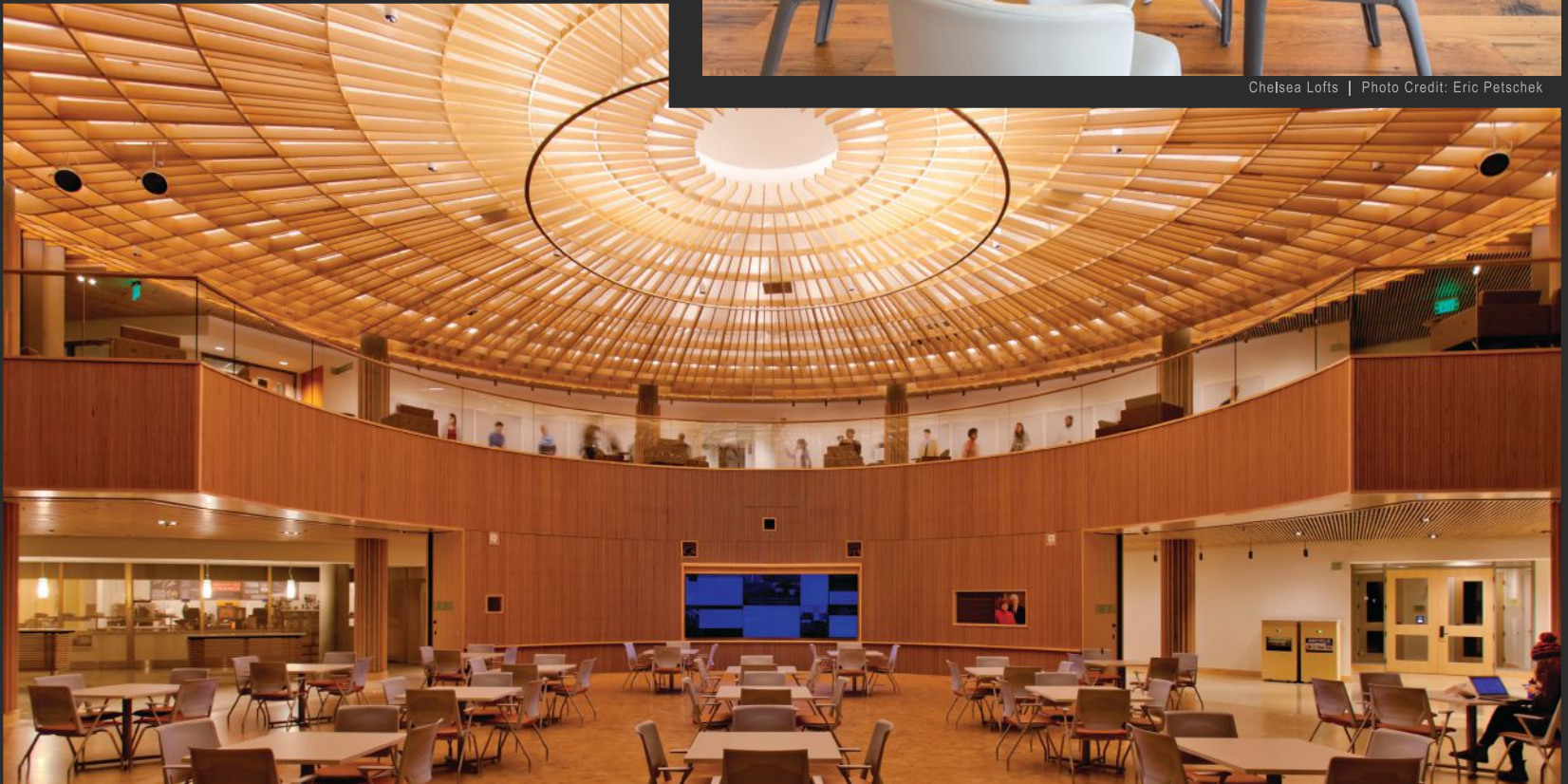
Minja Smejic



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30 YEARS OF ARCHITECTURAL LIGHTING

More than 300 architecture and lighting professionals gathered in New York City on Dec. 8 to celebrate ARCHITECTURAL LIGHTING's 30th anniversary and see a special presentation of the 2016 AL Light & Architecture Design Awards. The festivities were organized around the theme "Lighting: The Next Frontier" and included a series of presentations and a talk by lighting designer Leni Schwendinger, associate principal and leader of nighttime design at Arup. Installations from both designers and manufacturers examined the creative and technical potential of light. Visa Lighting, one of the event's sponsors, explored the relationship between nature and lighting in its installation "Industrious Harmony" (above), in which LED and OLED sources were used to represent how contemporary light sources are being used "to mimic organic light cycles" and represent "the synergistic opportunities of the [lighting] industry's next frontier." bit.ly/AL_30Event •



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ADVOCACY AFTER DARK

Cities around the world are appointing and electing “night mayors” to promote their nighttime economies.



In Paris, the night mayor is tasked with empowering the nightlife industry and taking part in infrastructure planning like the Place de la République renovation.

Text by Katharine Keane

Historically, daytime and nighttime hours have been associated with different—and even conflicting—personas, but with technology enabling round-the-clock illumination and productivity, society is functioning and flourishing at all hours of the 24/7 cycle. As such, cities around the world are creating roles for appointed or elected officials who are tasked with connecting and empowering their nighttime economies, community members, and political stakeholders.

These “night mayors” are attempting to change the perception of their cities after dark by using special evening programming, extended business hours, and improved community engagement. And, while they are often driven by the pursuit of economic stimulus in their cities, these nighttime advocates are also put in the position where they have to confront issues of accessibility, safety, and city illumination.

Municipalities such as Amsterdam, Paris, Geneva, Zurich, Berlin, and Tokyo are all part of the ever-growing list of cities with individuals or councils dedicated to their night economies. As recently as last November, the mayor of London, Sadiq Khan, appointed Amy Lamé as the city’s first ever “night czar” to promote nightlife industries such as clubs, bars, restaurants, and performance centers—all of which contribute up to \$32 billion annually to the U.K.’s economy.

According to advocates such as Mirik Milan, former club promoter and Amsterdam's night mayor since 2012, bars and clubs serve a greater purpose than just drinking and dancing. "Nightlife is a place where creative people meet. It's a place where innovation takes place," Milan says. "And having a vibrant nightlife makes sure the city benefits from social, cultural, and economic perspectives."

Although urban metropolises share common issues that they have to address such as safety, community engagement, and urban planning, when it comes to their nighttime persona, each city has a unique agenda. In Paris, for example, the challenge lies in translating the city's nighttime needs to political and municipal policy. "What is important for Paris is that the city considers its nightlife an integral part of the whole of the city," says the French capital's first night mayor François Hocquard. After the Place de la République—which is located at the intersection of the third, 10th, and 11th arrondissements—was reconfigured from a vehicular thoroughfare to a pedestrian-only plaza in 2013 at the cost of €12 million (approximately \$12.9 million), residents complained that the area lacked sufficient illumination at night. The initial construction plans had not fully accounted for the plaza's nighttime occupancy as an all-pedestrian area and instead opted for minimum light levels knowing the surrounding streetlighting was quite bright. In the months following the project's completion, lighting designer Yann Kersalé was brought back to expand his initial lighting design. "The largest difficulty is [ensuring] that the city at night is integrated as a primary dimension of city policy," Hocquard says. Today, the area is illuminated with 16.5-meter-tall (54-foot-tall) poles that taper to a point at the top. Selux worked with the Kersalé to customize their Olivio LED luminaire fixture heads that are secured to the top of the poles and emit a white light for the pedestrians spaces and an orange light for the surrounding roadways.



Q+A WITH MIRIK MILAN, AMSTERDAM'S NIGHT MAYOR

When did you become Amsterdam's night mayor?

I started in 2012, but the role has existed since 2003. At first it was just a voluntary position, but we transformed it into an independent NGO in 2014.

Can you describe your responsibilities?

Our goal is to bridge the gap between the municipality and small businesses like nightclubs, but also city residents. We always say, by having a dialogue you can change the rules of the game.

In a way, I'm the eyes and the ears of the mayor by night. The reason we are independent is because we want to work on both sides. We help the city when new legislation is coming out of City Hall by explaining it to nightlife operators. But also, we lobby and try to explain to the city and to the City Counselors what is needed [to advance our agenda]. It's really difficult to penetrate the city's nightlife from your office in City Hall. And we are the liaison between the two sides.

Talk about the "festival approach" to moderating cities after dark.

At a festival, you can have 10,000 to 20,000 people attending. At the end of the day, you have one guy being caught for pick-pocketing and one fight. So

we said, "OK, can we apply this same structure to the nightlife square?" [So we asked] what is it about festivals [that they remain relatively conflict-free]? You always have easy-on, easy-off access. You know what the program is, you know where to get drinks, you even know in which direction you should walk, and you always feel welcome.

This is why we were looking at [applying these ideas to] public spaces and also making sure that we have "square hosts" and better signage to inform people. There are now 20 "square hosts" who walk the streets every Friday and Saturday night between 9 p.m. and 5 a.m. and they are seen as nonaggressive. If there is a situation on the street, they try to de-escalate the situation. They are in contact, of course, with the police directly. They collect a lot of data. Every time somebody asks them something, they make a report about what's happening.

What programs is Amsterdam planning for 2017?

Later in this year, we're going to do a summit for and about women in nightlife. It will be about female entrepreneurship, about sexism, and safety. I think it's really important to speak about [these issues] more, because even if I post something [online] about it, there are still people asking if this is really a problem.

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Reimbrantplein is one of Amsterdam's busiest nighttime areas. It features an 1876 statue of the famous painter and sculptures depicting his famous *The Night Watch* painting were added in 2006. The plaza underwent a €3.5 million (approximately \$3.7 million) renovation in 2009.

In other cities, night mayors function as after-dark culture ambassadors who promote evening activities that engage local businesses and citizens. "I see my role mainly as a connector," says Angela Verkuijlen, night mayor of Nijmegen in the Netherlands. With a group of seven "night counselors" who are her "eyes and ears all over the city," Verkuijlen aggregates information on the community's needs and challenges to mediate between the local government, business owners, and residents. Though elected by city voters in a process separate from municipal elections, Verkuijlen is actually the head of the nonprofit Stichting Nachtburgemeester Nijmegen (Nijmegen Night Mayor Foundation) that wields no enforceable power within the municipality. "What we see in the Netherlands is that in history, it was the municipality that made all the decisions," Verkuijlen says. "[So we try] to connect creative people that have great ideas with the municipality so their ideas can be brought to action more easily."

Mirik Milan—who has become the international voice for nightlife empowerment over the past several years and was responsible for organizing the first-ever Night Mayor Summit in April 2016—considers the creation of 24-hour venues a major success in promoting Amsterdam's nightlife scene while respecting the needs of local residents. By allowing bars and clubs in certain neighborhoods to stay open at their discretion, the city now ensures the streets are no longer flooded with hundreds of revelers as was the case when venues were forced to close at 4 a.m. "If they're [right] outside, the venue has the obligation to make sure that the people then leave the premises," Milan says. "But [often once] they're outside, they're going to go home, and they're not going to make a mess



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“[We try] to connect creative people that have great ideas with the municipality so their ideas can be brought to action more easily.”

— Angela Verkiujlen, night mayor of Nijmegen, the Netherlands

on the streets.” However, as night owls stay out later, questions of security and sufficient street illumination also arise.

With the guidance of Australian research center Designing Out Crime, Milan and Amsterdam officials are working together on a pilot program in Reimbrandtplein square—one of the city’s busiest destinations replete with hotels, clubs, and cafés—to create a safe, welcoming nighttime environment. The city has already installed wallgraze luminaries directly onto one of the five major building façades and has plans to install more to provide gentle but comprehensive illumination for the area. “The idea is that if it’s an environment in which you feel safe, you will behave better,” Milan says. On the advice from Designing Out Crime, the city has also reduced the light output of a large nearby advertising screen by 60 percent at night for a gentler-looking environment.

With the widespread success of these nighttime ambassadors, cities such as Sydney and Stockholm are considering implementing their own versions. According to Milan, representatives from San Francisco, Los Angeles, New York, and Austin, Texas, have all been in contact about Amsterdam’s program.

No longer are day and night being treated as disparate and conflicting entities; instead, cities across the globe are now accepting and embracing the varied activities that can take place at virtually any point in a 24-hour, seven-days-a-week cycle. Business, municipal, and resident stakeholders have a greater awareness of the economic and societal implications of this lifestyle, and are increasingly prioritizing their nighttime economies and making business and cultural ventures at night more feasible. •

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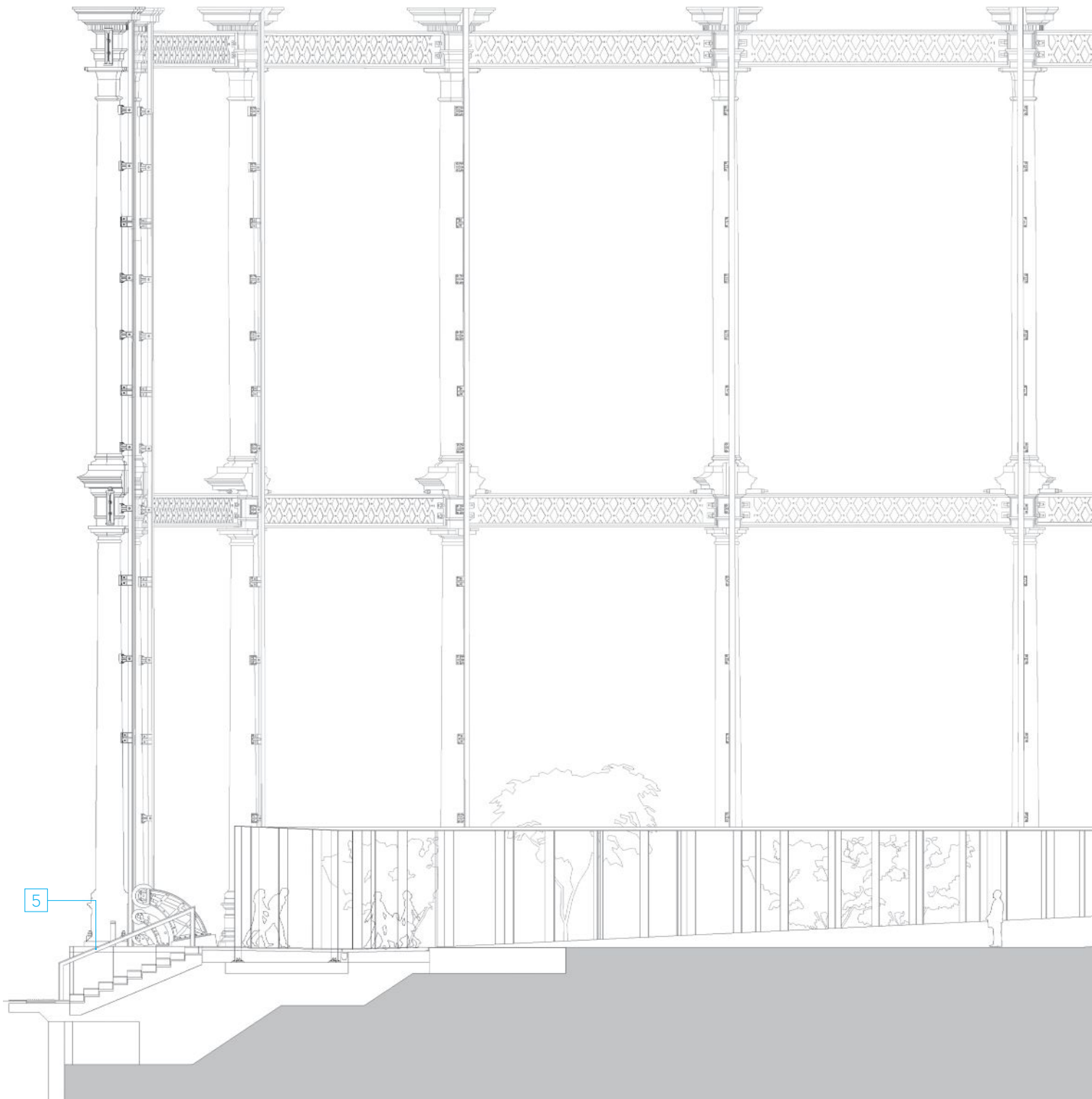
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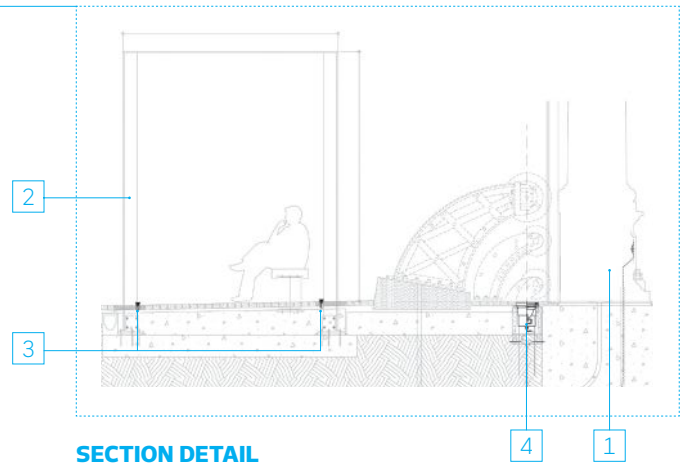
GASHOLDER PARK, KING'S CROSS, LONDON

SECTION THROUGH SITE

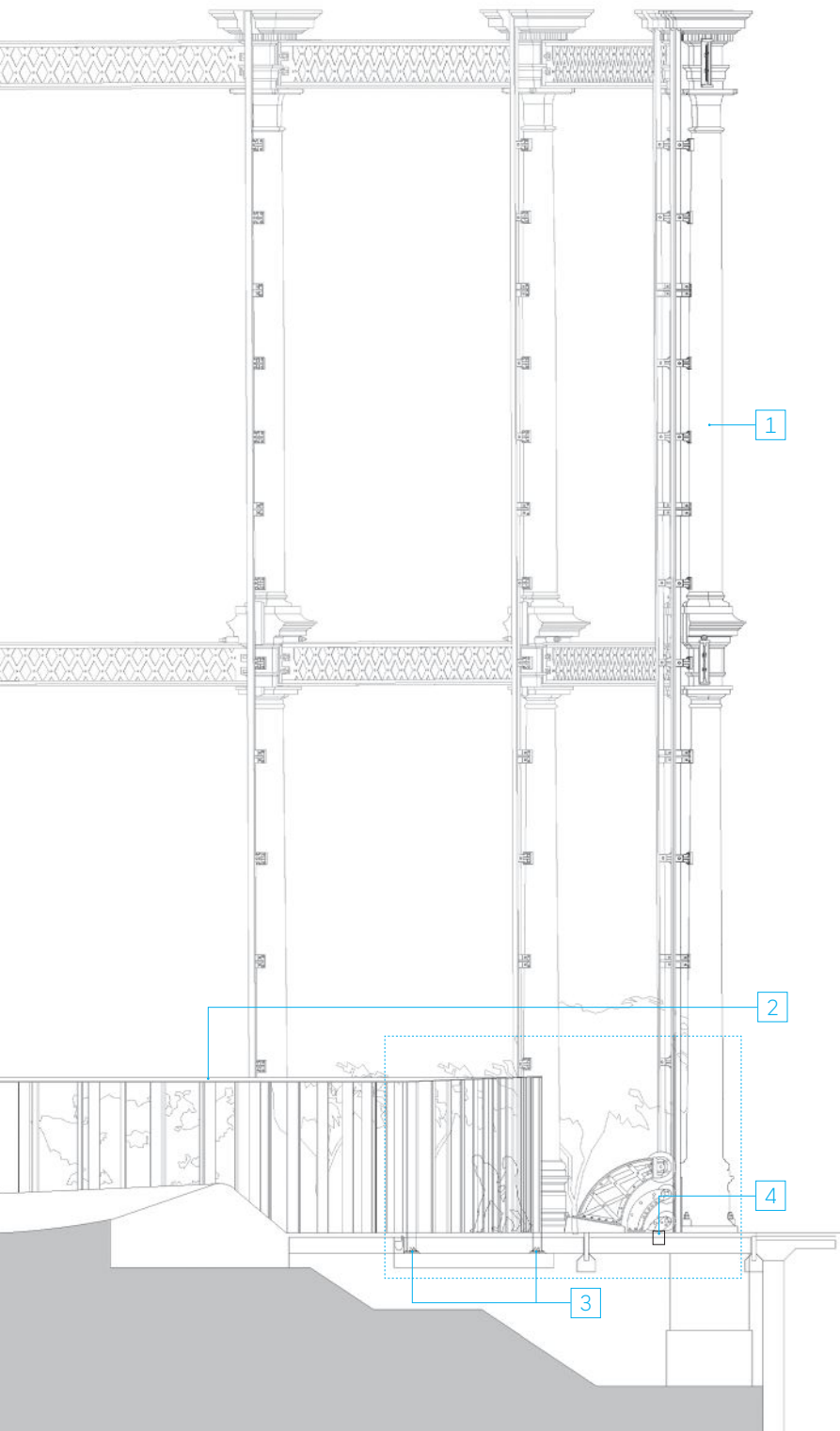


Legend

- 1 Gasholder structure
- 2 New stainless steel canopy
- 3 In-ground LED uplights to illuminate stainless steel canopy
- 4 In-ground LED uplights to illuminate gasholder structure
- 5 Linear LED handrail lighting



SECTION DETAIL



text by Belinda Lanks

photo by James Newton

Standing beneath a circular, stainless steel colonnade in London's Gasholder Park, nighttime visitors can witness a solar eclipse every 20 minutes. The effect is a lighting sleight-of-hand: LED uplights along the canopy's perimeter dim sequentially, simulating the moon moving across the face of the sun, creating a dynamic spectacle for both the residents of the surrounding King's Cross redevelopment and children from a nearby school.

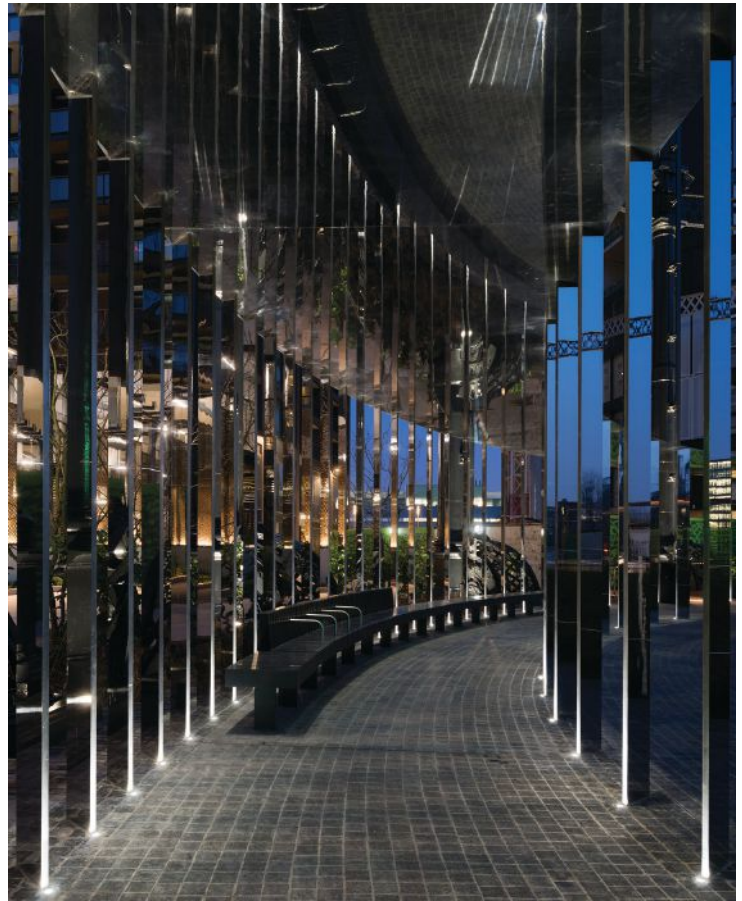
The pocket park is the competition-winning design of London-based Bell Phillips Architects, who organized the space as a series of concentric areas with a circular lawn at the center. Surrounding the green space is a hardscaped walkway from which the restored structure of Gasholder No. 8—an 82-foot-tall cylindrical metal frame constructed in the 1850s to hold coal gas—emerges from behind a newly added stainless steel canopy. The architects tasked local lighting design firm Speirs + Major, who had been involved in the larger King's Cross redevelopment, to sharpen the material contrast between the cast-iron gasholder and the internal stainless steel canopy and make the park as alluring and functional at night as it is during the day. "The circular layout led us to the idea that we could use light to create both a beautiful nighttime landmark as well as an enlivening immersive experience, inspired by the idea of a solar eclipse," says Speirs + Major design integrator Philip Rose.

For the solar-eclipse effect, the architects wanted to illuminate each of the canopy's

columns from below, and Speirs + Major chose an in-ground 5000K 1W narrow-beam uplight. The fixtures follow the canopy structure's architectural rhythm, so that where its columns are positioned more closely together—to provide privacy for the buildings that overlook the park—the fixtures are also densely grouped. (At the northern end of the site, the columns are farther apart to allow views of Regent's Canal.) Using a lighting control system set to an astronomical clock, Speirs + Major programmed the luminaires to run on a 20-minute cycle—they start at fully illuminated, then dim to off, one-by-one, from east to west over a 3-minute period. After 2 minutes of darkness, the luminaires gradually return to full brightness, again from east to west. The variation in light levels (the light cycle changes according to the lunar calendar) creates a sense of movement and yields shifting shadows and reflections from the column surfaces, animating the park.

The light emitted from the canopy uplights reflects off the polished face of the steel columns and washes onto the pedestrian pathway, producing a kind of corona when viewed from above. In order to accomplish the celestial effect, Speirs + Major had to convince the architects to use a brushed finish for the edge of each stainless steel column, rather than the polished treatment used for the faces. "We had to make sure the material would be coarse enough that the light would be caught on it," Rose says. Another challenge was making sure that the fixtures were level, in order to align precisely with the 30mm-thin profile of the columns. "Any deviation," Rose says, "and the light would be spinning off to the side," rather than hitting the etched steel.

Even when the canopy fixtures go completely dark as they simulate a total eclipse, the park is never pitch-black, since the gasholder luminaires' remain illuminated. A pair of in-ground 4000K 24W uplights highlights each column and truss that hold the two-level Victorian-era structure together. The restrained lighting makes the gasholder, when seen from outside the park, appear in silhouette and creates the illusion that all of the light is emanating from the corona generated by the interior canopy. An additional layer of light is provided by 3000K 18W-per-linear-foot fixtures integrated into the stairs, ramps, and handrails that connect the site to the surrounding neighborhood. The result is an understated yet ever-changing lighting scheme that ensures a safe and enjoyable visual environment for both residents and visitors alike. •



Separate LED uplights, one type for the canopy and another for the gasholder, highlight the two different structures; the luminaires are programmed via a lighting control system to sequence through an illumination cycle to animate the park and surroundings while engaging visitors.

DETAILS

Project: Gasholder Park, King's Cross, London • **Architect:** Bell Phillips Architects, London • **Lighting Designer:** Speirs + Major, London and Edinburgh • **Landscape Architects:** Dan Pearson Studio, London (plantings) and Townshend Landscape Architects, London • **Engineers:** Arup and Hoare Lea • **Project Size:** 1,590 square meters (17,115 square feet) • **Project and Lighting Costs:** Not Available • **Watts per Square Foot:** 0.09 • **Code Compliance:** Not Applicable

MANUFACTURERS

ETC Paradigm: lighting control system • **Mike Stoane Lighting:** 3000K 18W linear LED luminaires at handrails • **Photonstar:** 5000K 1W narrow-beam LED uplights at stainless steel canopy • **We-ef:** 4000K 24W narrow-beam LED uplights for gasholder structure



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QUANTIFYING CIRCADIAN LIGHT AND ITS IMPACT

Melanopic lux is the wrong metric for describing circadian-effective light. Here is a better alternative.



text by Mariana Figueiro and Mark Rea, Lighting Research Center, Rensselaer Polytechnic Institute
illustration by Matt Murphy

The lighting community is currently considering the development and use of metrics that characterize circadian light—or light that acts as a stimulus for the human circadian system—to establish a design-performance standard (for a particular time of day) and to further research the suppression of melatonin production. Both light and dark set the timing of the master clock in our brains' suprachiasmatic nuclei (SCN), and disruption of this clock has been shown to negatively affect many health outcomes, from

breast cancer to diabetes.

Among the proposed metrics is “melanopic lux,” a term that can be loosely described as flux density weighted not by the photopic luminous efficiency function—or $V(\lambda)$, which peaks at 555 nanometers and is based on the response of foveal, long- and middle-wavelength sensitive cones—but by a luminous efficiency function, which peaks at 480 nanometers and is based on the action spectrum of melanopsin. (Melanopsin is the retinal photopigment within our eyes’



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Photometric units have not been established for the luminous efficiency function; consequently, quantifying light in terms of melanopic lux has yet to be defined.

intrinsically photosensitive retinal ganglion cells, or ipRGCs, which form the main neural conduit from the retina to the brain's master clock.)

Photometric units have not been established for the circadian luminous efficiency function; consequently, quantifying light in terms of melanopic lux has yet to be defined. More importantly, the impact on the SCN by different levels of melanopic lux is completely unknown. It is thus impossible to use the action spectrum of melanopsin to describe the effectiveness of electric light or daylight for stimulating the human circadian system.

METRICS MATTER

Apart from units and quantities, basing a metric on melanopsin alone is fundamentally problematic. With the exception of scotopic vision, a photopigment action spectrum is never the same as the spectral sensitivity of a neural channel response measured with electrophysiological or behavioral methods. After absorbing light, a photopigment generates a neural response from the photoreceptor. These responses are then combined into neural channel responses. For example, $V(\lambda)$ reflects the combined photon absorptions of erythrolabe and chlorolabe, which generate long- and short-wavelength cone responses, respectively. (Erythrolabe is the pigment in our retinal cones that is most sensitive to the red range of the spectrum, while chlorolabe is the pigment most sensitive to the green range.)

Furthermore, neural channel responses are also often combined to produce conscious perceptions of the luminous environment. The apparent brightness of a scene, for example, cannot be predicted from the response of the achromatic channel alone, which has a spectral sensitivity well described by $V(\lambda)$; it must also consider the two spectral-opponent color channels, blue versus yellow (b-y) and red versus green (r-g). For example, a white light will appear dimmer than a blue light of the same photopic luminance.

Sufficient empirical evidence shows that the spectral sensitivity of the neural channel providing input to the SCN is not based on melanopsin alone. The spectral sensitivity of the SCN, as measured by acute melatonin suppression by light at night, peaks around 460 nanometers. The action spectrum for melanopsin peaks close to 480 nanometers and, thus, by itself, is mistuned to the SCN spectral sensitivity.

Melanopsin is obviously important, but the photopigments within the rods and cones also affect the SCN's response to light. The contributions from these two photoreceptor types broaden and shift the spectral sensitivity of the SCN.

Perhaps most importantly, the action spectrum of melanopsin does not describe the response of the SCN to different amounts of light. The amount of light needed to reach a threshold response as well as the supra-threshold response characteristics to light exposure is important to define for architectural lighting. Without additional information regarding the operating characteristics of the human circadian system, the impact of any melanopic lux value on the human circadian system is completely undefined.

GLOSSARY

Suprachiasmatic nuclei (SCN)—site of the master clock, the region of the brain responsible for orchestrating circadian rhythms

Photopic luminous efficiency function—the spectral weighting function for all light measurements, adopted in 1924, erroneously assumed to be a measure of the spectral sensitivity of human vision

Action spectrum—rate of a physiological activity plotted against a specific wavelength of light

Scotopic vision—human vision under low light conditions

Photopigment—photoreceptor proteins in the retina that convert light into neural signals

Circadian light (CL_{λ})—irradiance at the cornea weighted by the spectral sensitivity of the human circadian system as measured by acute melatonin suppression after a one-hour exposure

Circadian stimulus (CS)—the calculated effectiveness of the spectrally weighted irradiance at the cornea from threshold (CS = 0.0) to saturation (CS = 0.7)

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In short, any metric based on melanopsin alone will be fundamentally inaccurate and incomplete as a representation of the spectral and absolute sensitivities of the human circadian system.

FIGURE 1. Circadian light is determined by these spectral weighting functions for cool and warm light sources.

FIGURE 2. This graph derives from measurements of nocturnal melatonin suppression. Circadian stimulus levels at different photopic illuminance levels are also shown.

PROPOSED METRICS

Circadian light and circadian stimulus are two metrics that characterize the spectral (FIGURE 1) and absolute (FIGURE 2) sensitivities of the human circadian system. These metrics are based on fundamental knowledge of retinal physiology as well as the measured operating characteristics of circadian phototransduction—the process by which the retina converts light into neural signals for the circadian system—from response threshold to saturation.

Circadian light is irradiance weighted by the spectral sensitivity of every retinal phototransduction mechanism that stimulates the biological clock, as measured by nocturnal melatonin suppression. Circadian stimulus is a transformation of circadian light into relative units, from zero (the threshold for circadian system activation) to 0.7 (response saturation), and is directly proportional to nocturnal melatonin suppression after one hour of light exposure (zero to 70 percent). Units and quantities for these metrics have been published in our 2010 *Journal of Circadian Rhythms* article “Circadian Light.” Predictions of melatonin suppression based on these metrics have been validated in the laboratory; these metrics have also been useful in describing light as it affects sleep and depression in several field studies, available on the Lighting Research Center (LRC) Light and Health website (see Resources).

We measured the impact of light on acute nocturnal melatonin suppression in terms of circadian stimulus from iPads and computer screens, after a one-hour viewing time in two separate laboratory studies. We measured light incident at the cornea with the Daysimeter, a wearable device developed by LRC researchers in 2004 to measure the amount of circadian light a person receives during the study, and then compared the predicted suppression amount (corresponding to the circadian stimulus value) with the obtained result. In the iPad study, the predicted melatonin suppression of subjects was 3 percent and the measured melatonin suppression was also 3 percent. In the computer screen study, the predicted melatonin suppression was 23 percent and the measured value was 20 percent.

In terms of applications, six field studies we conducted showed that daytime light exposures of circadian stimulus greater than or equal to 0.3 are associated with better sleep, better mood, and lower depression. Perhaps of most interest, in three of those field studies, Alzheimer’s patients who received light exposures of circadian stimulus greater than or equal to 0.3 during daytime hours and less than 0.1 during the evening hours consistently and significantly increased their sleep duration, improved their sleep quality, and reduced their symptoms of depression and agitation.

Although the science underlying these advanced metrics may seem complex, the circadian light and circadian stimulus metrics can be applied with relative ease using our circadian stimulus calculator, available on the LRC Light and Health website, which enables a lighting professional to convert the photopic illuminance at the eye provided by any light source, at any

FIGURE 1. MODELED SPECTRAL SENSITIVITY

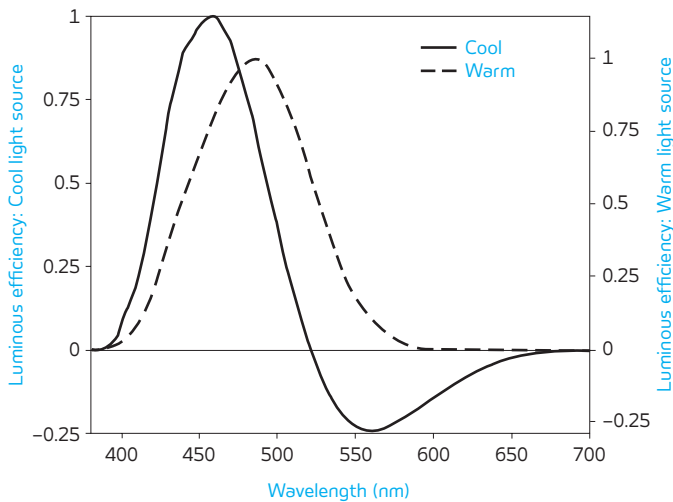
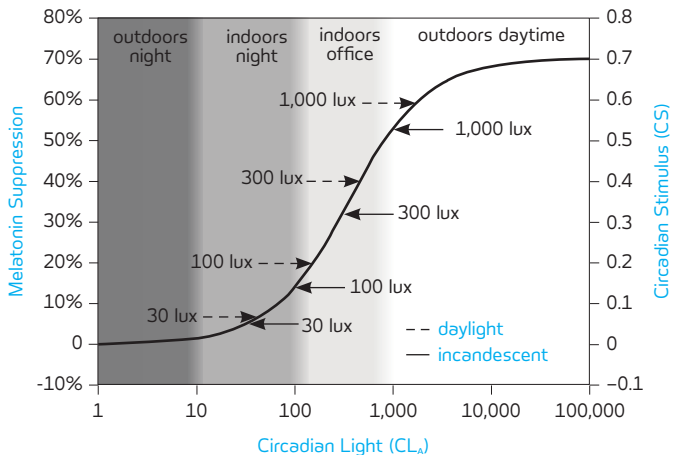


FIGURE 2. CIRCADIAN STIMULUS VERSUS CIRCADIAN LIGHT



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light level, into the effectiveness of that light for stimulating the human circadian system.

RECOMMENDATIONS

Architectural lighting isn't just for vision anymore. Clients are increasingly requesting and expecting lighting systems and applications that can support human health and well-being—and lighting professionals must be prepared to respond to those expectations. The first step must be measurement: If light as an enabler for health and well-being cannot be measured, it cannot be effectively delivered.

Although responses to circadian-effective light do vary from person to person, a lighting system that delivers a circadian stimulus greater than 0.3 during the day—particularly during the morning—and less than 0.1 in the evening is a great starting point. This guideline, of course, is overly simplistic. As such, we strongly encourage lighting professionals to seek opportunities that provide a deep understanding of the many ways light can affect health and well-being, and to become adept at addressing and designing lighting for special applications effectively. •

Mariana Figueiro, FIES, is a professor at the Lighting Research Center at Rensselaer Polytechnic Institute, where she also directs the Light and Health program. She is currently the center's acting director while Mark Rea is on an academic sabbatical through June 2017.

Mark Rea, FSL, is a professor at the Lighting Research Center and has served as its director since its founding in 1988.

SELECT RESOURCES

Lighting Research Center Light and Health website: bit.ly/AL-LRC-LH.

"Light as a Circadian Stimulus for Architectural Lighting," by Mark Rea and Mariana Figueiro, *Lighting Research & Technology*, 2016. Available at: bit.ly/2ji2UB3.

"Office Lighting and Personal Light Exposures in Two Seasons: Impact on Sleep and Mood," by Mark Rea and Mariana Figueiro, *Lighting Research & Technology*, 2016. Available at: bit.ly/2j6Ld43.

"Light Level and Duration of Exposure Determine the Impact of Self-Luminous Tablets on Melatonin Suppression," by Brittany Wood, et al., *Applied Ergonomics*, 2013. Available at: bit.ly/2jQHai.

"Comparisons of Three Practical Field Devices Used to Measure Personal Light Exposures and Activity Levels," by Mariana Figueiro, et al., *Lighting Research & Technology*, 2013. Available at: bit.ly/2jOvWGw.

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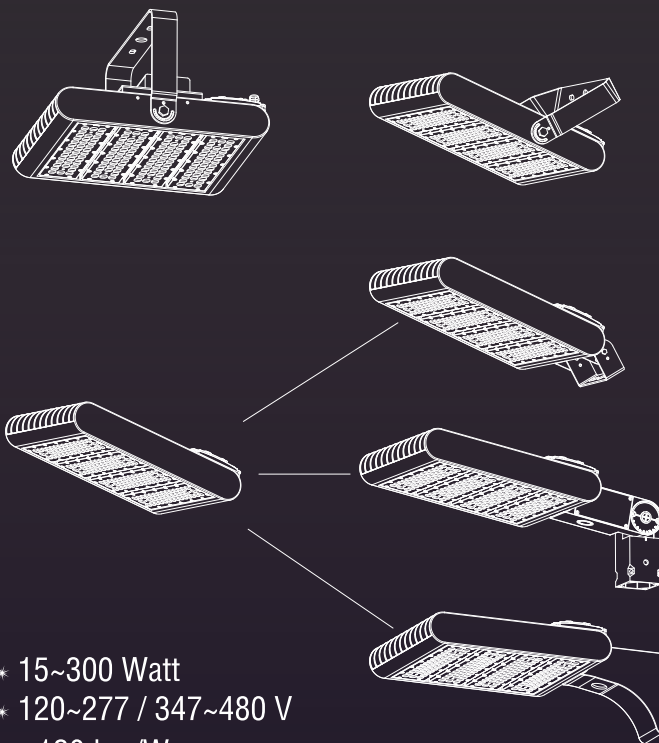
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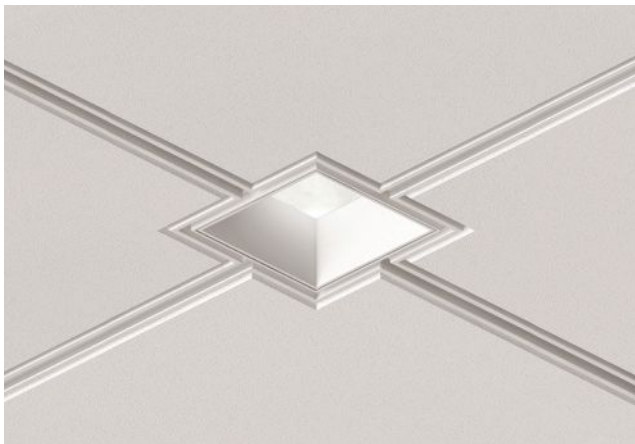
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text by Selin Ashaboglu



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LumeLEX Gemini Series, Lighting Services Inc • This suspended, indirect luminaire system combines LSI track with Xicato's XTM LED modules. Offered in lengths of 4', 8', or 12', the system features a concealed electronic integral driver that is compatible with a reverse phase (ELV) dimmer down to 5%. The fixtures can also be addressed and controlled with LumenTalk or zero-to-10V systems. Wattage range is 10W to 20W in 2700K and 3000K at a CRI of 83 or 98. • lightingservicesinc.com

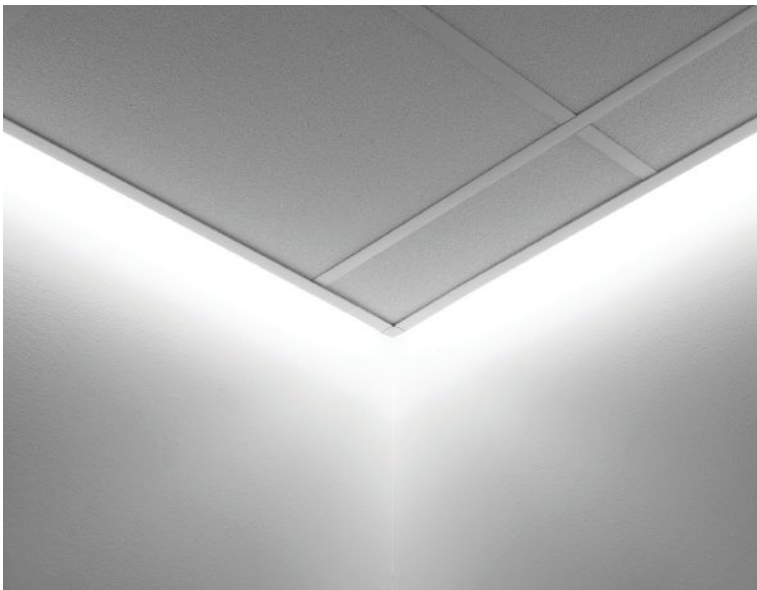


On-Center Downlighting, USAI Lighting and Armstrong Ceilings • A collaboration between the two manufacturers, On-Center Downlighting is a pre-engineered, trimless, ceiling tile suspension system suitable for office environments and other commercial applications. On-Center Downlighting is designed around USAI's BeveLED Connect downlights, which can be installed, via a snap-in-place mechanism, at the intersection of four ceiling panels. • usailighting.com



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This modular fixture provides both indirect and direct illumination, and glare control via a snap-in louver. The luminaire is available in 2700K, 3000K, 3500K, 4000K, 5000K, and 6500K at a CRI of 80-plus. The fixture has four direct and six indirect beam angle options. Available in incremental lengths of 1' ranging from 2' to 8' with either a square or round-edge profile. Zero-to-10V dimming is the standard option; DALI dimming is a custom option. • acolyteled.com



HP-WS High Performance Perimeter Slot, Finelite •

Designed for ambient or vertical illumination, the fixture is offered in 2'-, 3'-, 4'-, and 8'-long sections. It has been updated with a threaded-rod installation option, 90-degree inside and outside corners, a tapered optic, and telescoping sections. The fixture delivers up to 771 lumens per foot and incorporates the company's tunable white technology that allows for color temperatures between 2700K and 6500K and dimming down to 1%. • finelite.com

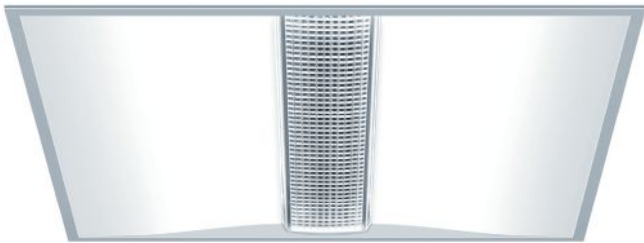
Profile, Fluxwerx, a Lumenpulse Brand •

Profile is a suspended linear LED luminaire that features a hollow aperture design, a fully luminous interior, and vertical optics. The fixture is available in 19W, 23W, 29W, and 38W at 3000K, 3500K, and 4000K with a CRI of 80-plus. It measures 3.1" tall by 3.25" wide and comes in 4'-, and 8'-long lengths. The housing is made of clear anodized, extruded aluminum with either a beveled or flat-edge endcap. Finishes are metallic silver or black powdercoat. • fluxwerx.com



PRODUCTS

Mellow Light, Zumtobel • Zumtobel has launched the sixth generation of this recessed luminaire family designed for office lighting first introduced in 1988. Available in two versions—Mellow Light evolution and Mellow Light infinity—the luminaires feature a slimmer profile, advanced optics, and current white light and color-tuning technology. The luminaire has a center optic and two outer wings for light diffusion. Lumen output and lux levels depend on the fixture configuration. • zumtobel.com



Purelight LED, Selux • The Purelight LED is available in a pendant (3.75" diameter) or a surface- or wall-mount version (4" by 3.56"). The fixture can be specified with either a square or tubular housing and as an individual fixture or in continuous runs in lengths of 2', 3', 4', 6', or 8'. The luminaire features a snap-on lens, perforated reflector, secondary diffuser, and digital color temperature control with My White technology. Dimming options include zero-to-10V, DALI, and Lutron. • selux.us



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IMAGINING THE FUTURE OF THE CITY AT NIGHT

original essay by Roger Narboni,
translated from the French
portrait by Antoine Doyen

Roger Narboni on the rue
de Robert de Flers in Paris'
15th arrondissement.





Thinking about the city of today and the transformation of our urban environment is a way to think about the larger issue of public lighting. As cities grapple with a complex set of concerns such as changing demographics, housing, and infrastructure, how will lighting respond? Imagining what the city of tomorrow looks like is a starting point for imagining new forms of illumination and the future of the urban nightscape.

The scenarios outlined here are not “scientific truths,” but instead my personal hypotheses; subjective, and by no means exhaustive. Nevertheless, they are ideas to be considered as we contemplate ways of addressing the issues pertaining to public lighting and light environments.

Over the course of my 30 years of professional work as a lighting designer, I have observed, on many occasions, people’s ability to envision the future and propose new concepts and new lighting products that might resonate with city dwellers even before the need for those concepts or products are requested. These proposals then have the unexpected effect of opening up new ways of appropriating nocturnal space, and encouraging activities for those spaces that no one had previously envisioned.

Just as studying, measuring and observing an experience in quantum physics (whose laws, you will recall, do not match the laws of general physics) alters both content and outcome, giving intellectual and technical shape to a possible future for the nighttime city could, paradoxically, bring it about.

THE CHANGING CITY

Almost all functional lighting that we see today in every city is a product of the post-World War II period, installed in response to the increase in the number of vehicles in urban centers to help drivers see more clearly at night. This was particularly important, given that automobile headlight technology was not very advanced at the time. In fact, functional lighting, intended primarily for vehicular traffic and systematically imagined and deployed by municipal engineers, is still one of the most commonly applied illumination strategies in developing megalopolises.

These functional lighting needs have resulted in the methodical installation of lampposts in orderly processions along the roadway, at regular intervals determined by their height, to achieve the sacrosanct lighting uniformity that—abstract though it may be—is prescribed by lighting engineers. These principles and doctrines have produced all the daytime and nighttime images of streets, and all the patchwork landscapes in cities today. The tonalities of light, following on successive technological developments in its sources, have only incrementally altered these

spangled nocturnal tableaux.

For several years, in most of the densely populated cities in the world, new urban policies have been adopted to reduce the number of cars in a city, the speeds at which vehicles travel, and the amount of space automobiles take up. In turn, the regained public space is being reintroduced to encourage public transit, soft modes or personal forms of transportation such as bicycles and scooters, and pedestrian areas.

These major urban developments must encourage us to revolutionize the way we think about public lighting in cities. Examining the possible future (whether dreamt of or dreaded) of urban lighting means tracing and understanding the changes cities are undergoing today, and, in turn, how these major shifts can transform the nocturnal city and lead to different ways of thinking about how to illuminate it.

THE CITY BY NIGHT: WELCOMING AND DEDICATED TO URBAN DWELLERS

Lighting for vehicles is one of the first areas to consider when discussing the urban nightscape. Whether it stems from reducing the numbers of personal vehicles, and even possibly their absence in the long term, the gradual disappearance of traffic lanes will transform the design of public space. I imagine that we will see proposals for uninterrupted pedestrian walkways between buildings that will no longer need orderly lines of regularly spaced lampposts to illuminate the roadway that once was there. The city will thus, little by little, be returned and dedicated to its people.

The pole lighting offered today, once it has become obsolete, will also have to be transformed, and evolve into modular lighting structures that are able to create intangible “rooms” defined by light and nocturnal spaces of different kinds and varying sizes. For this, we need to invent another type of urban light, different forms of lighting with diverse functions, in order to respond to this morphology in the future development of public space.

These new types of lighting systems will mean that the city can be lit differently, not just so that we can see and move around, but also so that it invites, even urges people to stop for a while, creating new boundaries, whether narrower or broader, and puts a certain end to the regularity and rigidity of the public lighting of yesterday.

These congenially lit spaces, which are also capable of offering shelter from the weather, will be dedicated to the well-being of inhabitants (stress-reducing environments, attention paid to biological rhythms and light therapy) in order to encourage dialogue and encounters between people in the public realm. These exchanges and interactions with one another will



generate nocturnal places, intangible “rooms” that can transform and shape the lit environment and visually interact with the surrounding space, further expanding its use. These new places will offer passersby the opportunity and freedom to direct and choose their lighting atmosphere using a variety of available components such as intensity, color, lighting sequences, types of lighting, arrangement in the space, effects, volumes, and so on.

LIGHTING MATERIALS AND LUMINOUS ARCHITECTURE

Since the birth of public lighting (which, in Europe, can be traced to the Middle Ages), public spaces—the empty spaces in the city—have always been lit, in particular by lanterns attached to the surrounding buildings. (Nearly two-thirds of the luminous points in large French cities, which are built up and dense, are attached to brackets on the fronts of buildings.) Today, the systematic planting of trees along roadways has significantly altered this classical approach.

The urban nightscape as illustrated by an aerial view of Columbus Circle in New York City (opposite).

A luminous building façade in Tokyo (below).



Historic, modern, or contemporary architecture is sometimes illuminated, decorated with lights or, on occasion, adorned with lit signs or advertising. But all of these lighting systems are dependent on buildings, and virtually never contribute to the lighting of public spaces. (There is one exception to this rule, in Las Vegas, with its intensely lit buildings along the Strip.) Public lighting is thus still totally indifferent to the architecture it shares space with, whether or not the architecture is illuminated.

As the morphology of the city evolves, we can imagine a new urban future, one in which there is a new relationship between private and public spaces, that creates a new role for building frontages, and new forms of architecture that incorporate structures that project above a public space, lampposts that make room for light-emitting surfaces, and lighting equipment attached to walls or incorporated directly into building façades, structures, the undersides of infrastructure, and the ground to illuminate the adjacent public space from below without needlessly occupying it. The materials used for our ground surfaces along with building façades could become luminous surfaces at night to create this new perception of nocturnal space.

This change, one that I think is inevitable, from the lit city to the luminous city, requires a new set of guidelines and responsibilities to be defined and allocated among building owners and municipal authorities that must ensure public safety at night. It also calls for the training of architects and engineers going forward, in order that the lighting needs of adjacent public spaces are taken into account in architectural design, and perhaps, ultimately, the evolution of the work of the architect into that of a lighting architect.

The advent of luminous materials for both horizontal and vertical surfaces will bring about a profound change in the way architecture is designed. The architecture/space/light relationship, when considered first in terms of natural light, will be transformed. Architecture will no longer be designed, as it is today, solely in terms of its solar orientation (and the gain from natural light); rather it will be designed on the basis of the internal arrangement of luminous vertical structures that generate artificial light, and that contribute fully to the daytime composition of buildings. Transparent panels will become luminous at night. Opaque walls, that will have become extremely thin, will be luminous, starting with low light levels by day (to supplement solar gain) and increasing in intensity as night falls. They will be arranged in the areas of a building that today are considered to be in secondary daylight. This will change the daytime and nighttime uses of our built structures, and ultimately the design of current floor plans for all building types from offices to schools to hospitals, hotels, and housing.

It is estimated that by 2050, 40 percent of city buildings will be new construction, to meet the rising needs and continuous growth of urban populations. (Two-thirds of the 10 to 12 billion inhabitants of the planet will live in cities by then.) We can see the future size of this new market for structural lighting systematically incorporated into buildings.

The new luminous city will establish a different relationship with public space, one that will increasingly become home to luminous modes of transportation, luminous clothing, and portable devices for pedestrians.

LUMINOUS CLOTHING AND AUTONOMOUS LUMINOUS OBJECTS

Today, walking with a cellphone or smartphone is a fact for city dwellers the world over. But 30 years ago, these now-familiar objects did not exist. Their availability and use has had a profound impact on our behavior and the way in which we interact with one another, buildings, and public space. The nocturnal urban décor of the future will also be transformed by the

emergence of luminous objects and accessories. Light-emitting clothing and autonomous portable lanterns, for example, will give users the opportunity to manage their nocturnal environment based on their own needs and wishes.

Although smartphones today are already equipped with a lighting system that lets people see at night (they have become our de facto flashlights, both from the basic screen light output and the use of a flashlight app), their light is rudimentary and does not allow for the creation of a quality illuminated environment. Luminous clothing and luminous accessories incorporated into footwear, such as roller skates or skateboards, that are made possible by the development and miniaturization of LEDs, batteries, and their energy autonomy capacity, are also providing urbanites with a great degree of personalization and the first forms of nocturnal autonomy.

The recent emergence of civilian drones that can be remotely piloted or programmed to follow a person as well as early experiments with using them to carry lighting both prompt me to imagine a future where illuminated environments and lighting for landscapes and architectural sites can be accomplished using these aerial devices rather than from the ground or pole luminaires at intermediary heights. These new flying luminous objects will very quickly be incorporated into the arsenal of lighting options available to designers, perhaps first to create event lighting, and then, more certainly, to further the possibilities offered for nighttime lighting in cities. We can then easily imagine that the initial function of public lighting, which was to enable people to see and be seen, will gradually be challenged by the freedom that city dwellers are given to decide when and how their nearby nocturnal space must and may be illuminated.

The voluntary creation of a network of autonomous portable luminous objects will enable passersby to re-create a collective luminous space, or to illuminate an architectural or landscape component on demand. These autonomous portable lanterns could be thought of in the same way as existing systems for open access or rental bicycles or electric cars.

Urban lighting will then no longer be public, but shared, and could function only when users are present. This revolutionary transformation, from urban lighting that must be tolerated to active urban light, could open the way to rediscovery of the dark in the city and experiments with sharing and pooling the urban darkness.

MANAGING THE DARK

The first study of a “dark infrastructure” was initiated by the city of Rennes, France, in 2012. When it prepared its lighting master plan to accompany the implementation of its climate plan, city officials sought to reduce its electrical consumption for public lighting by 20 percent by 2030. This was the origin of a new lighting strategy, one based on creating a plan to protect and preserve darkness that could be applied throughout the city, and to support the “green” and “blue” areas in the city.

This elimination approach based on darkness was studied by theorizing the respective roles that public lighting and darkness should play in the city. It was developed in response to the residents of Rennes who had clearly expressed their belief at public meetings and on exploratory nocturnal walks that there was too much lighting in the city. They desired to preserve darkness, particularly in the city’s large natural spaces.

The resulting “dark zones” in Rennes has made it possible to define and delineate geographic and temporal areas of partial or temporary darkness, and where they are connected and may be crossed. Today, the idea is being applied in all major developments located on or near the large natural spaces in Rennes, and to generate in-depth conversation about preserving

“This change ... from the lit city to the luminous city requires a new set of guidelines and responsibilities to be defined and allocated among building owners and municipal authorities.”

A proposed (but not realized) lighting scheme for the city of Lille, France, suggested the use of portable lighting elements such as lanterns, so that residents could engage with the city's public spaces based on their own needs.





ordinary nocturnal biodiversity in relation to light pollution.

Preserving the darkness of the night in urban areas calls for information, cooperation, and clearly identified processes to allow for urban dwellers to move around at night in safety, across or alongside the dark sites. In that way, the development of this type of darkness strategy will be understood and accepted by adjacent landowners and residents. This educational work must be carried out in the long term, by experimenting with different types of soil treatment, the boulevards along roadways, and arrangements that allow for identifying surroundings through contrast in very low light levels, below 1 lux. When darkness is no longer automatically synonymous with irrational fears or feelings of insecurity, new urban scenarios can be imagined in response to energy crises and the global desire to combat climate change and reduce air pollution. This experimentation will allow for rediscovering the night in the city and inventing new ways of lighting that allow for darkness.

The development of environmental networks and green zones around major metropolises will serve as engines for changing the nocturnal landscape in cities and on their outskirts. Areas of darkness can then be gradually extended, to contain and delineate the luminous islands that are formed by megalopolises at night. These new vast expanses of dark

areas will allow the human eye to develop and rediscover new night vision capabilities, and this will encourage city dwellers to re-adapt, mentally and psychologically, to walking around in the dark at night. When urban populations gradually abandon autonomous self-carried lights, this will open the way to learning about the night and new therapies based on the pleasure of being and moving in profound darkness. This gradual rediscovery of the dark and of twilight will also come about through the development and deployment of bioluminescent materials and future generations of LEDs.

THE ADVENT OF BIOLEDS

LEDs are gradually and systematically replacing lighting's legacy sources, and by 2030 they will be installed everywhere. But there are also other important areas of research such as optoelectronic and bionic discovery of new and even more powerful illumination sources, as in the case of BioLEDs, which is the product of hybridizing LED technology and genetically modified bioluminescent bacteria, with energy efficiency. It is hoped that this technology can achieve 400 lumens per watt and will make way for a revolution in non-energy-consuming urban lighting that will adapt automatically, in real time, to new uses of urban space (analyzing the

Courtesy CONCEPTO

CONCEPTO's competition-winning lighting master plan design for the banks of the Huangpu River in Shanghai incorporates bioluminescent lighting elements in the water.



“Transformation from urban lighting .. to active urban light could open the way to **rediscovery of the dark.**”

ambient light and urban form, flows and density of users, lighting needs, temporary conditions) and will operate for city dwellers on demand.

These futuristic sources, whose characteristics and potential are still undefined today, will lead to the creation of new nocturnal landscapes, both natural and urban, that are totally synchronized with and exist in symbiosis with the environment, and that will be the catalyst for the birth of a new profession: biolighting designers.

The ideas, proposals, and examples outlined in this essay are based on my work in lighting, lighting master planning, and the public realm the past 30 years. Urban illumination as a field is still very young, but as lighting evolves, coupled with general advances in technology, there are great opportunities and potential for illumination strategies to shape and take center stage in the development of the nighttime environment. In fact, the complexity of our urban world necessitates a greater awareness by all design professionals about how we use light and dark in shaping the built environment. We must also accompany the city's developments to its night territories. Light urbanism and lighting master planning as we have known it for nearly three decades, is still too focused on the illumination of the city. This approach will, however, start to gradually disappear and as our cities transform, and evolve into what we can call “a nocturnal urbanism.” •

Roger Narboni is an independent French lighting designer, who launched a new discipline called Light Urbanism in 1987. In 1988, he established his practice, CONCEPTO lighting design studio, near Paris. During his more than 30 years of practice, he has realized more than 130 lighting master plans and numerous landscape, urban, and architectural lighting projects in France and abroad. Recognized as a leading expert on lighting master planning and city lighting strategies, he regularly teaches and lectures at conferences around the globe.



IN THE STILL OF THE NIGHT

Lynn Saville's photographs capture the rare quietude in sleeping cities.

Corner, Brooklyn, N.Y.

"The feeling of three-dimensional space on this corner is emphasized by the single streetlight, which was the main source of illumination. I was told that the building is one Edward Hopper once painted."

**Lighted Windows,
Madison Avenue, New York**

"This is the first photograph I took for my series Dark City: Urban America at Night. I was fascinated by the abstract shape of the glowing window.

The paper-covered storefront gave the façade a flatness, which reminded me of Rothko's paintings. For the first time, I could understand the appeal of a head-on view of a building."

text by Mimi Zeiger

photos and captions by Lynn Saville

When photographer Lynn Saville was a child, her parents had a cabin in rural Vermont. Fascinated by the dark, she'd stand on the back porch and stare into the dense woods. The bright pool of light created by a single porch light would gradually fade into the trees, until darkness eclipsed the view. "To see the one light source was ... a refuge," she recalls.

Today, Saville roams cities on foot between twilight and dawn in search of the perfect shot. Equipped with a couple of digital cameras (a Nikon and her new favorite, a Sony mirrorless A7r II outfitted with a Zeiss 28mm lens) that she tucks under her loose-fitting jacket, she searches for the







**Warehouses, Bushwick, Brooklyn, N.Y.
(opposite)**

"Early one morning I visited Bushwick. The offbeat colored lighting seems to be part of the gentrification of this formerly industrial area."

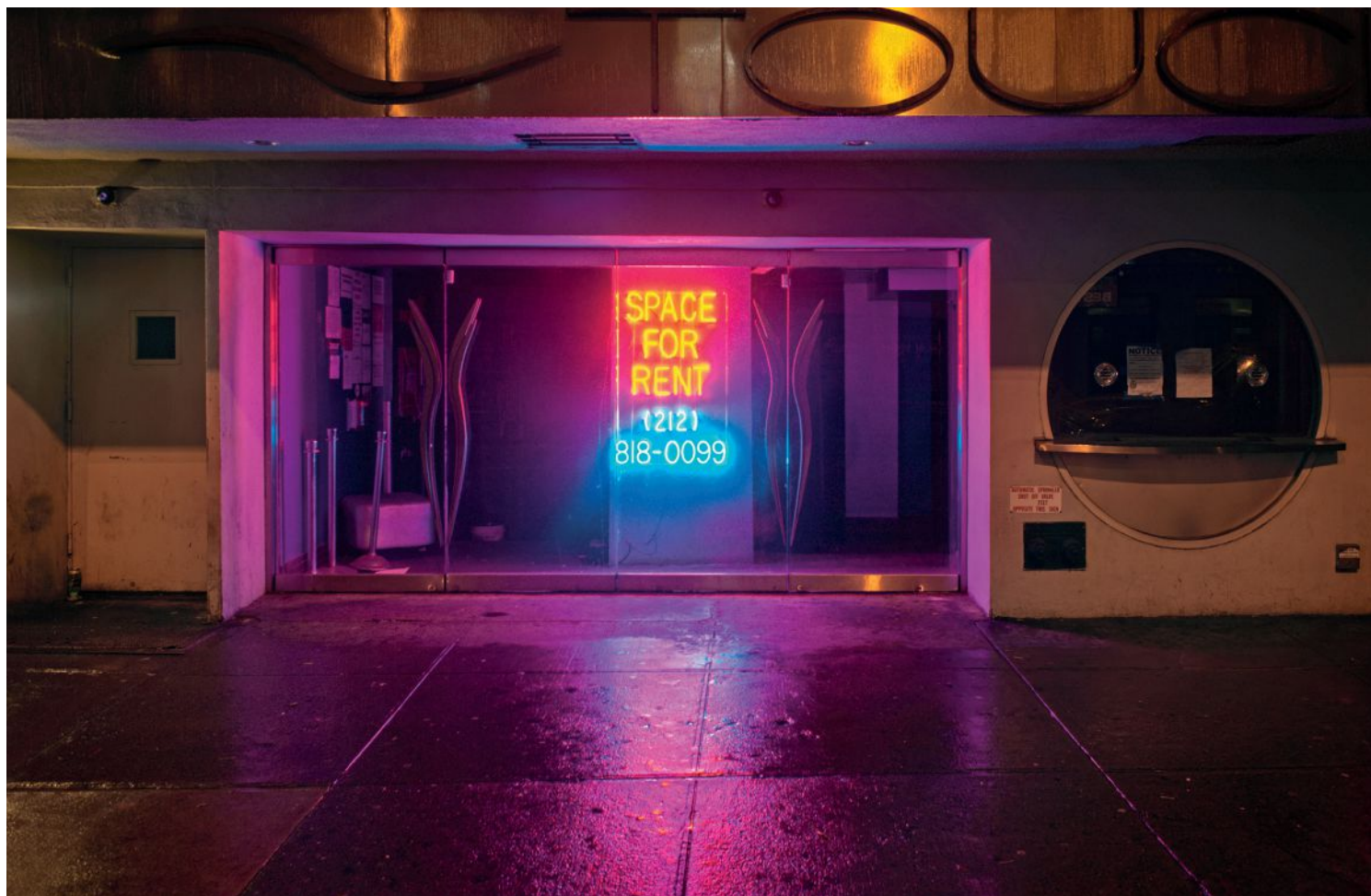
Neon Sign, West 50th Street, New York

"A glowing light drew my attention at the intersection, because the entire block was quite dark due to the several vacant stores. The sign appealed to me because of the cheerful colors and glowing neon light. Normally, I might not have paused to look at this place, but the pink and blue light allowed me to concentrate on the basic architectural structure of the storefront. Without products, normal signage, or mannequins in the window, I could see the place in its own glory."

uncanny quietude and sense of wilderness that comes overnight, when most people are asleep.

Based in New York City for some four decades, she's devoted her artistic practice to photographing at night. Currently she's working on a commission for the Metropolitan Transit Authority to document the west façade of Grand Central Station, revealed by recent construction and unseen for decades, which will be exhibited in the food hall this spring. True to her technique of using available light, she photographed the façade using only reflected light that bounced off the surrounding buildings.

She has also authored three books dedicated to overnight subjects. The most recent is *Dark City: Urban America at Night* (Damiani, 2015), which presents a shadowy world of empty storefronts and disused industrial sites. Given the time of day they were taken, you might think that the images would have a film noir or eerie



feel, offering premonitions of impending violence or crime. Instead, her work is about the stillness found in a pool of electric light.

"In the city it is always busy, there's so much happening, but at night it shifts and you can achieve some solitude—you don't need to go to the country," Saville says. Her nocturnal explorations are an adventure into territory made strange by the night. "The city is still there even though we are not out and about in it. You can get moments and places where you can be alone," she says.

Saville first came to New York in the mid-1970s to study at Pratt Institute. She was smitten by photography, especially street photographers like André Kertész and Lee Friedlander, who snapped pictures during the day. But Saville connected with the nighttime. An introductory drawing class taught her about tonality. Her instructor had students cover a sheet of paper in charcoal and then erase, coaxing form and depth out of the black soot. The exercise forever changed her artistic sensibility and how she took photographs: her first images were in black and white, often shot using a 35mm Leica rangefinder film camera. Later, she expanded to color—with an emphasis on rich hues of red or yellow placed against a dark blue-black background. Today she also uses a Nikon (the digital D800e model) as well as a Phase One, a digital medium format camera. Occasionally, she'll bring a tripod, depending if she wants to slow down and set up the composition.

With *Dark City*, Saville not only captures moments in the dark, but also the changing economic reality of the late 2000s across the United States. In 2008, she started to notice the impact of the recession in New York: vacant storefronts along Madison Avenue, one of the city's toniest shopping areas. One boutique would be selling furs and its next-door neighbor would be empty. "It was like suddenly seeing your neighbor without their clothes on," Saville says. "The whole city had a lot of gaps, like a jack-o'-lantern with missing teeth."

In his introduction to *Dark City*, author Geoff Dyer reflects on the boom and bust, writing that it is the "economic equivalent of the diurnal cycle of night and day, light and dark." Illuminated with whatever light was on hand, everything from streetlights to neon signage, Saville's photographs give a dignity to the failed stores. One shop in

Harlem is lit only by a string of festoon lights. Along Front Street in Brooklyn, her photograph of a stripped-down retail space is lit by streetlights, which project inverse shadows across the floor. A neon sign on West 50th Street casts a magenta glow onto wet pavement. Of the "Space for Rent" sign, Dyer writes, "[it] advertises its own emptiness so effectively that it seems a shame to convert it to any other use."

Other photographs in *Dark City* take in whole landscapes of decline, but never succumb to "ruin porn," the trend for images that make decay seem spectacular. Instead, Saville photographed the Michigan Central Depot in Detroit, framing the edifice in a stately composition, while the only hint of present abandonment is the tall grasses in the foreground. Still, Detroit proved a tricky place to capture. Saville would scout for sites during the day and go back at night to photograph, only to find herself let down by the city's lack of infrastructure. "None of the streetlights would go on," she says. "I'm dependent on light—car lights, the light from a pharmacy or liquor store. There were whole avenues where the lights were out."

Streetlighting is critical to the work; Saville notes that as cities change to LED fixtures from high-pressure sodium (HPS), she faces a challenge. The LED lamps are bright and white. They create a diffuse beam spread instead of an amber pool of light and have a lot of glare. "There was a certain warmth and charm [with HPS], and that warmth gave a slight romance in the city," she notes.

As the economy has rambunctiously improved since the downturn, Saville finds herself trying to keep ahead of gentrification in Manhattan and Brooklyn. The High Line is now a popular urban park, not an overgrown railway spur. The once derelict St. Ann's Warehouse under the Brooklyn Bridge is now a performing arts space. "New York seems to be zipped up and it's hard to find a tangle of weeds," she laments. With her camera in tow, she heads farther and farther into the boroughs for inspiration and wildness. By photographing overnight, Saville captures the urban environment at its most naked or vulnerable and her images offer us a nighttime view into what we often miss in the light of day. The effect is more gentle than jarring. There's a haunting fragility in her photographs—recognition, perhaps, that the darkness is just as fleeting as the light. •



West 126th Street, New York

"I am intrigued by the variety of colors of light falling on the building and the adjacent parking lot. The abrupt combination of warm and cool light is a characteristic I frequently see as night falls."





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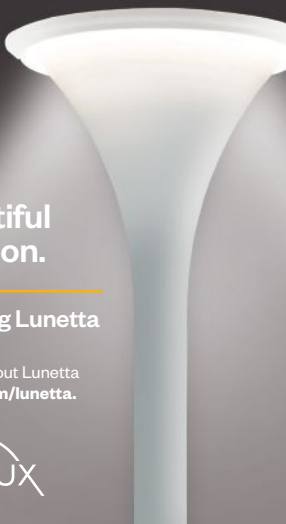


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LINNAEA TILLETT

“There’s tension in this idea of urban lighting as being a one-off and what it really means to take on issues of putting in things that will last.”

Linnaea Tillett is a landscape lighting designer. It is a point she makes very clear and it stems from the seriousness with which she approaches her work. Growing up in New York City, Tillett was curious about everything around her, and it was that innate curiosity that led her to lighting. Intrigued by storefronts and display lighting, she worked for a time with Brian Thompson before establishing her own firm in 1983. But she wanted to move beyond interiors and understand more about the public realm. That led her back to school to get her Ph.D. in environmental psychology. Today, her portfolio features a diverse set of projects with leading architects and landscape architects that all have a common thread—the responsibility that comes with working in the public realm and illuminating spaces that people use at night.

How do you view the relationship between architecture, lighting, and landscape?

I don’t know how you could teach lighting designers to be landscape lighting designers if you didn’t teach landscape; they’re linked, different phases of the same experience.

How do you think about the night?

When you are designing for spaces that people occupy after hours you have to understand it’s a different psychological and perceptual space. The night is a realm with its own rules. It’s a process not an event.

What are the challenges of working outdoors?

You need to be flexible and adaptable. There are some things, such as the weather, that you just cannot control.

How has your practice changed?

Clients have a greater awareness about the issues we are dealing with such as color temperature and light trespass. They engage in the project dialogue differently as a result.

Do you have a design philosophy?

Find the poetry in the landscape and amplify it. Pay exquisite attention to function and support it. Make absolutely sure the public nighttime space feels right.

What advice would you give a young designer?

Go out and look. Look at the ground and understand what it is, how it shifts. Look at trees and how roots grow under pavement. Look at the landscape and embrace it. •

interview by Elizabeth Donoff
photo by Jesse Dittmar

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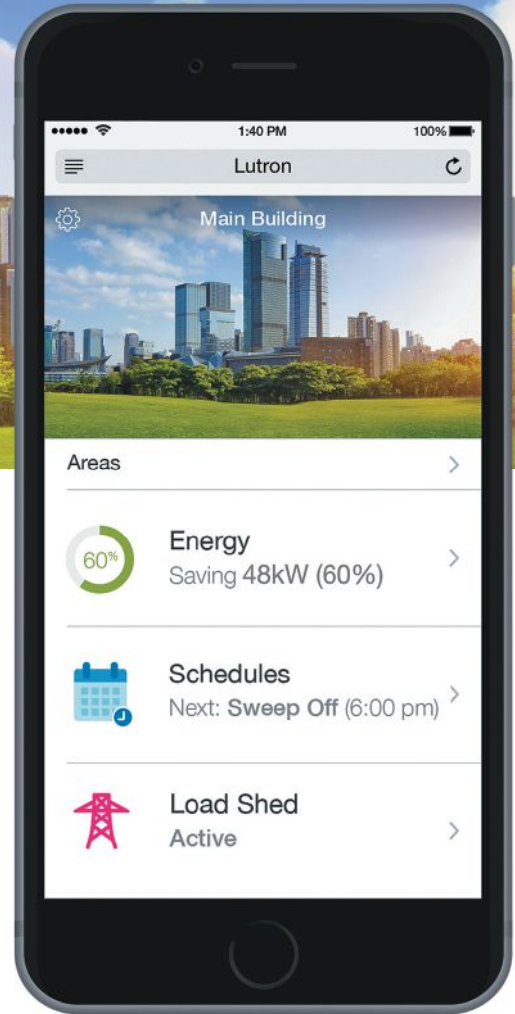
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