



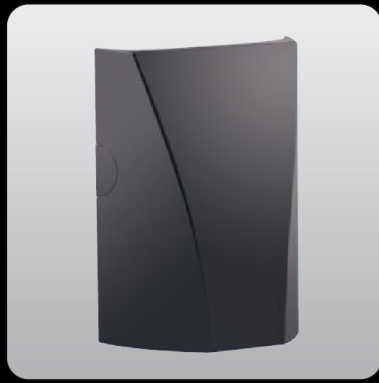
A close-up, low-angle shot of white plastic interlocking floor tiles. The tiles are arranged in a grid pattern, with the perspective looking down and slightly to the side, creating a sense of depth and repetition. The lighting is bright and even, highlighting the smooth texture and sharp edges of the plastic.

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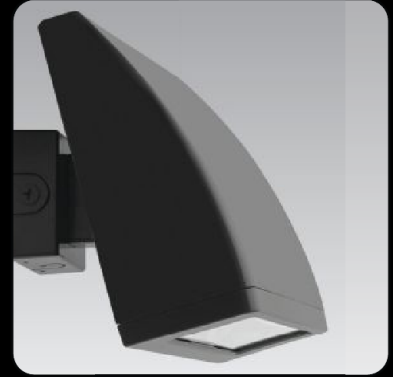
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IMAGES: The Menil Collection | Houston | 2013 AIA National Twenty-five Year Award recipient Architect: Renzo Piano Building Workshop | Photos: Alistair Hunter, Richard Bryant, Paul Hester, and Hickey & Robertson



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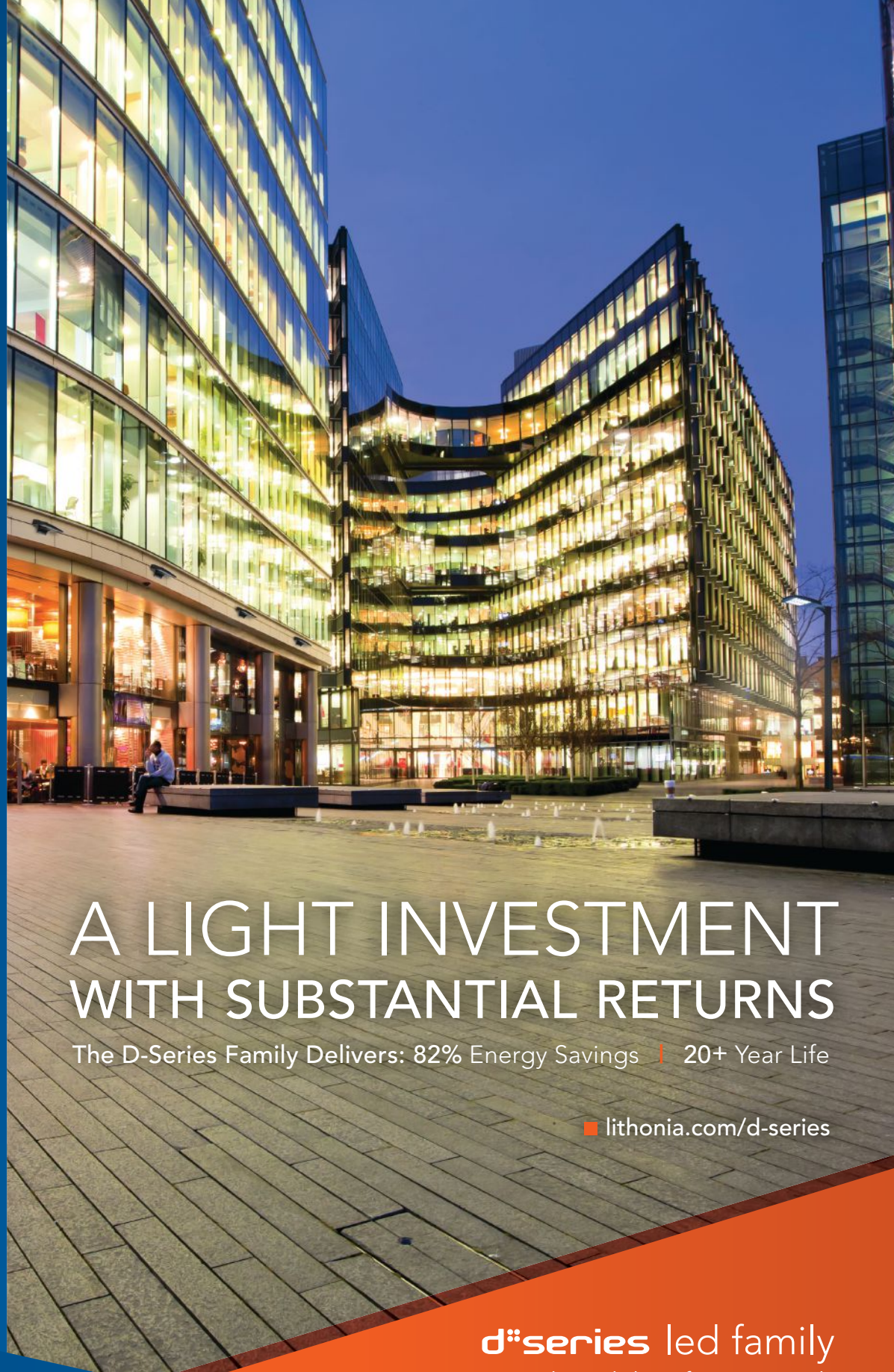
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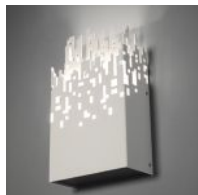
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As always, check out our website for expanded article content, news, and calendar listings. Also, subscribe to our email newsletter, AL Notes, and find a link to ARCHITECTURAL LIGHTING's digital edition.

Cover:
Rendering proposal of the Lowline.
Image by RAAD Studio, New York.

Clockwise from left: Courtesy Arup, Cristalleries de Saint-Louis, Cooper Lighting



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“Instituting a Lightfair press preview would make a lot of sense from a scheduling perspective—for manufacturers, editors, and show organizers. It would create a dedicated portion of time for manufacturers to hold non-competing press conferences, facilitate uninterrupted discussion, and allow editors to see manufacturers’ special displays that often can only accommodate a few people at a time.”

AN EDITOR’S REQUEST

The theme of this issue is innovation; it’s a topic that we devote an entire issue to each year. But what does innovation mean? This is a question that I often ask members of the lighting community when I interview them for the One-on-One column. (You can find these on the last page of every issue; in this issue, on page 56, I spoke to Mark Major of Speirs + Major.) The responses I get usually hone in on something that has not been thought of before, a new way at looking at a topic, or finding a new solution to an existing problem.

Innovation isn’t merely a technological concern, it is something that is needed anytime there is a problem to overcome. And it is with that idea in mind that I have been reflecting on this year’s Lightfair—not in terms of what I saw at the show, but in terms of how someone in my position, an editor, has to structure his or her time in the brief two and half days when the exhibit hall is open.

Lightfair has many different constituents: attendees, a group composed of lighting designers, architects, educators, and even students; exhibitors, which includes manufacturers and sales representatives; and members of the press. Each has a different role at the show and a different set of goals and responsibilities. As far as editors go, I think it’s fair to say that we have complicated and busy schedules. We have to simultaneously serve as ambassadors for our publications and fulfill our reporting duties.

What’s become increasingly clear to me—the longer I serve as editor of ARCHITECTURAL LIGHTING and the more Lightfairs I attend (this year was my tenth)—is that the old way of tackling the show no longer works. There used to be time to walk the show floor, and even to attend a few seminars. But as the event grows in size and more activities and presentations are added to the lineup—which, for the record, I’m not saying is a bad thing—the length of time that the trade show is open has not expanded. It becomes increasingly difficult to see as much as one would like, and it is impossible to schedule visits at every booth.

What I propose (and this is something I even have mentioned to the Lightfair organizers the past several years) is to institute a press preview the afternoon before the trade show officially opens to attendees. Say from 2 p.m. to 5 p.m. It would be a win-win situation for everyone. Yes, I realize that this would change the dynamic, there would need to be an earlier setup time for manufacturers and this would add some cost. But how great would it be to have better access for the press to see your latest products and meet with your company’s thought leaders?

Instituting a Lightfair press preview would make a lot of sense from a scheduling perspective—for manufacturers, editors, and show organizers. It would create a dedicated portion of time for manufacturers to hold non-competing press conferences, facilitate uninterrupted discussion, and allow editors to see manufacturers’ special displays that often can only accommodate a few people at a time.

Furthermore, it would enable press–manufacturer activities to take place at the convention center and not off-site. It could also allow manufacturers some time to make sure that everything in their booth is working properly, to take photos, and to meet with their teams before the rest of the show begins.

Allowing members of the press some exclusive time on the Lightfair show floor before the exhibit hall opens would lead to more complete coverage. And while I can’t speak for other publications, I can’t imagine why their editors wouldn’t welcome such an opportunity. No lighting publication has a large editorial staff, and even a few hours more to speak directly with manufacturers and to tour booths would allow us time to meet with more exhibitors and, ultimately, to share more information with our readers.

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• BRIEFS

LIGHTFAIR 2013

The annual conference and trade show continues to thrive with its support from the lighting industry.

text by Elizabeth Donoff

Ten companies received awards for "Best Booth" displays including Reggiani Lighting USA (above), who along with Axo Light USA, was the recipient of the Best Booth in the Global Light + Design Pavilion.

Now in its 24th year, and its return to Philadelphia, Lightfair 2013 set new records. The trade show hosted 538 companies, 91 of which were first-time exhibitors. The conference and trade show also broke attendance records with 26,026 registered professional attendees representing 79 different countries.

Despite the tight economy, the annual lighting conference and trade show, the largest of its kind in North America, continues to thrive thanks in large part to the dedicated support from the lighting industry. The event's organizers work hard to provide a wide range of educational offerings, manufacturer displays, and networking opportunities, and each year continues to expand its programming, particularly when it comes to providing education content on the show floor.

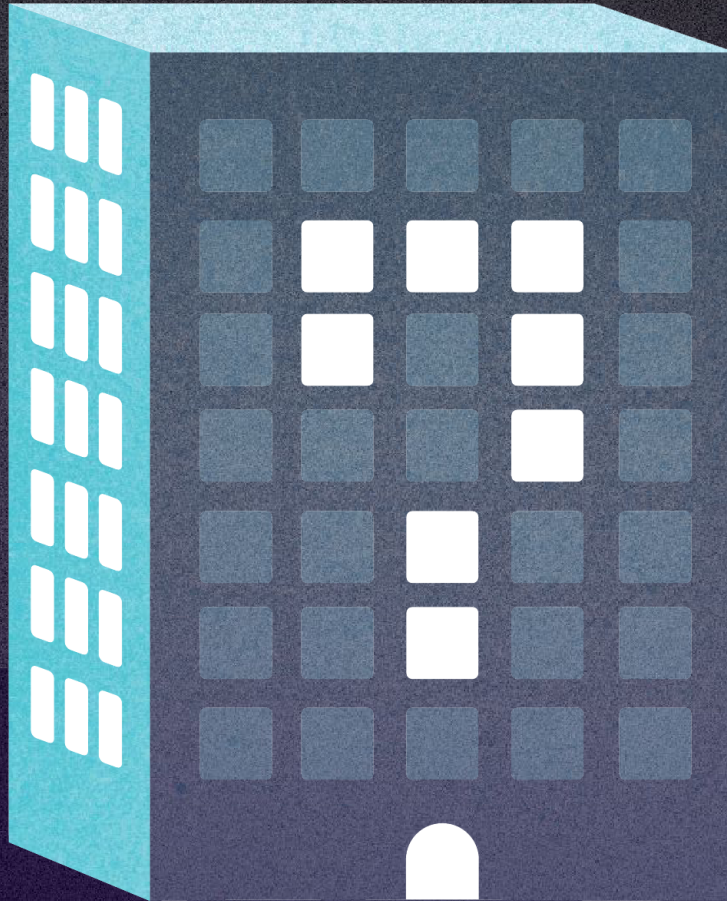
This has been the most noticeable with the addition of the Spotlight Lounge, where presentations take place during the course of the trade show. Two such presentations

this year were by venture capitalist Vinod Khosla of Khosla Ventures, who spoke about "Opportunities for Lighting in the Cleantech Revolution," and *LD+A* editor Paul Tarricone, who moderated a discussion between lighting designers Paul Gregory and Paul Marantz. This year the Spotlight Lounge was located in Hall F, which included two new features: the Media Marketplace and the LFI News set.

The trade show portion of the event, which occurs on the final two-and-a-half days, was the largest it's ever been: 233,850 net square feet. Adding to its collection of dedicated product "pavilion" areas, this year saw the launch of the Exterior & Roadway Lighting Pavilion. The show also included the introduction of two new product categories: solar power and software.

As for products, one could see the industry's increasing comfort level with solid-state lighting. Controls also continue to play a crucial role, as well. As such, tunable white light was a feature incorporated into many company's line-ups. •

Courtesy Reggiani Lighting USA



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Radiance Award-winning project the HafenCity-University Subway Station (top); Award of Excellence winning projects Silo 468 (center) and Crown Towers Eastern Entry (bottom).

2013 IALD INTERNATIONAL LIGHTING AWARDS

Ten projects were recognized from an international field of more than 220 entries.

text by Elizabeth Donoff

The 30th Annual IALD International Lighting Awards were presented on April 24 at an evening program held at the Crystal Tea Room in Philadelphia. The highest honor, the Radiance Award, went to Pfarre Lighting Design for the HafenCity-University Subway Station in Hamburg, Germany. The 2013 winning projects were:

RADIANCE AWARD

Project: HafenCity-University Subway Station, Hamburg, Germany; **Lighting Designers:** Pfarre Lighting Design, Munich, and D-Lightvision, Munich

AWARDS OF EXCELLENCE

Project: Silo 468, Helsinki; **Lighting Designers:** Lighting Design Collective, Madrid

Project: Crown Towers Eastern Entry, Melbourne, Australia; **Lighting Designers:** Electrolight, Melbourne, Australia

AWARDS OF MERIT

Project: Burlington Arcade, London; **Lighting Designers:** Speirs + Major, London

Project: Cité du Surf et de L'Océan, Biarritz, France; **Lighting Designers:** L'Observatoire International, New York

Project: Lakewood Cemetery Garden Mausoleum, Minneapolis; **Lighting Designers:** HGA Architects and Engineers, Minneapolis

Project: Tokyo Skytree, Tokyo; **Lighting Designers:** Sirius Lighting Office, Tokyo, and Nikken Sekkei, Tokyo

Project: Sneakerology, Sydney; **Lighting Designers:** Electrolight, Melbourne, Australia

Project: Kunming Changshui International Airport, Kunming City, China; **Lighting Designers:** Shanghai Grandar Light Art and Technology Co., Shanghai

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Project: Qatar National Convention Centre Banqueting Suite, Doha, Qatar; **Lighting Designers:** Light and Design Associates, London •

For more information on the IALD International Lighting Awards program, visit bit.ly/194EPkP.



Top: Markus Tolhoff; Center: Tuomas Uusheimo; Bottom: Matt Irwin



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Project: Community Maritime Park - Pensacola, FL
Photo: Paul Brown

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2013 GE EDISON AWARDS

In it's 30th year, the program recognized 11 projects.

The 30th annual GE Edison Awards (bit.ly/194AU7M) were presented April 22 at an evening program held at the Philadelphia Museum of Art during Lightfair. This year, the highest honor, the GE Edison Award, was presented to L'Observatoire International. The 2013 winning projects were:

GE EDISON AWARD AND AWARD OF EXCELLENCE
Project: Vintry Fine Wines, New York; **Lighting Designers:** L'Observatoire International, New York

AWARDS OF EXCELLENCE
Project: Harry Winston Shanghai Pavilion, Shanghai; **Lighting Designers:** Cline Bettridge Bernstein Lighting Design, New York

Project: Space Shuttle Pavilion at the Intrepid Sea, Air and Space Museum, New York;
Lighting Designers: Focus Lighting, New York

Project: Velti Headquarters, San Francisco;
Lighting Designers: PrichardPeck Lighting, San Francisco

AWARD FOR RESIDENTIAL DESIGN AND AWARD FOR ENVIRONMENTAL DESIGN
Project: Scarlett Residence, Vancouver, British Columbia, Canada; **Lighting Designers:** Total Lighting Solutions and Dialog, Vancouver, British Columbia, Canada

AWARD FOR ENVIRONMENTAL DESIGN
Project: Hilton Columbus Downtown, Columbus, Ohio; **Lighting Designers:** Tec Studio, Columbus, Ohio

AWARD OF MERIT AND AWARD FOR ENVIRONMENTAL DESIGN
Project: Arquitipo UNARTE, Puebla, Puebla, Mexico; **Lighting Designers:** Lightteam, Mexico City

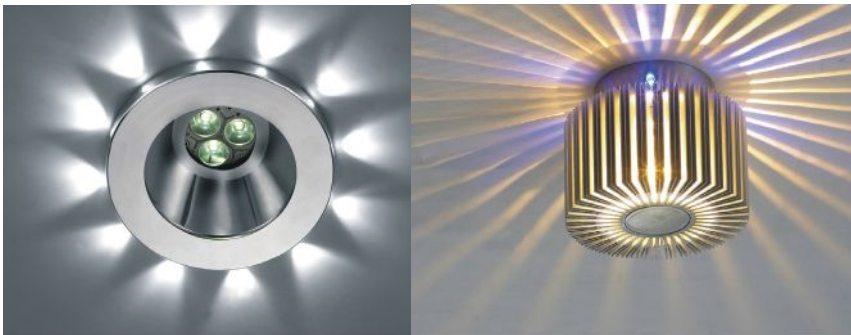
AWARDS OF MERIT
Project: The Burlington Performing Arts Centre, Burlington, Ontario, Canada; **Lighting Designers:** Consullux Lighting Consultants/CEL, Toronto

Project: Concert and Congress Centre, Augsburg, Bavaria, Germany; **Lighting Designers:** D-Lightvision, Munich, Germany

Project: The Smith Center for the Performing Arts, Las Vegas; **Lighting Designers:** SBLD Studio, New York

Project: Sutphin Boulevard Overpass, Jamaica, Queens, N.Y.; **Lighting Designers:** Domingo Gonzalez Associates, New York •

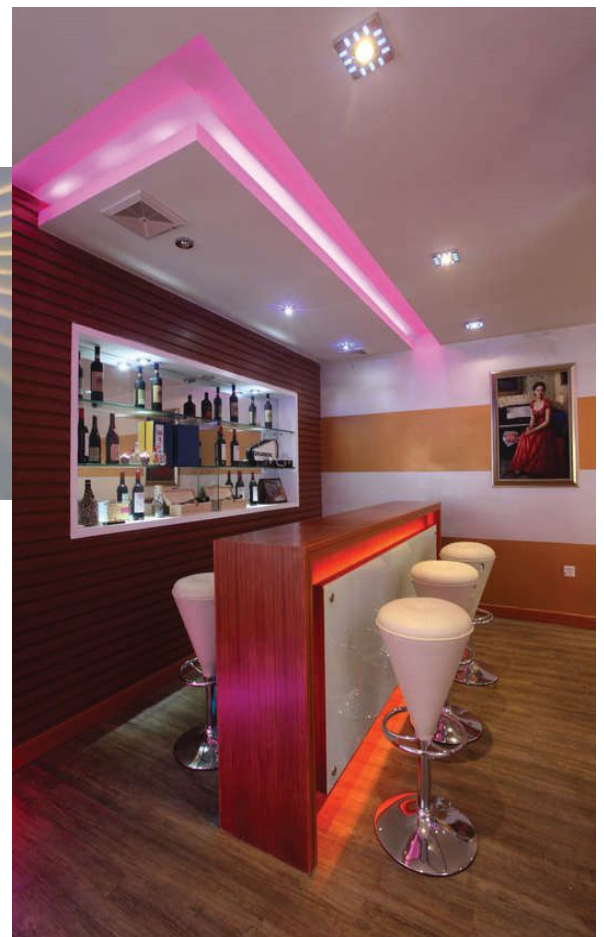
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2013 COOPER SOURCE AWARDS

This year, 11 awards were given out: six at the professional level and five at the student level.

The 36th Annual Cooper Lighting Source Awards were announced on April 22 at Lightfair, during a lunch keynote talk titled "The Lowline: Rediscovering New York," by Lowline founder James Ramsey and lighting designer Star Davis of Arup. The Cooper Source Awards (go to bit.ly/M6C8jW for more coverage) recognize both professional and student work. The 2013 winning projects were:

PROFESSIONAL COMMERCIAL CATEGORY

Project: Cole Capital, Phoenix, Ariz.;
Lighting Designers: Creative Designs in Lighting, Phoenix, Ariz.

PROFESSIONAL RESIDENTIAL CATEGORY

Project: Colorow Residence, Edwards, Colo.;
Lighting Designers: Robert Singer and Associates, Basalt, Colo.

PROFESSIONAL COMMERCIAL HONORABLE MENTION, SUSTAINABILITY AWARD

Project: University of North Texas Business Leadership Building, Denton, Texas;
Lighting Designers: Jacobs Engineering Group, Fort Worth, Texas

PROFESSIONAL RESIDENTIAL HONORABLE MENTION

Project: Tiehack Compound, Aspen, Colo.;
Lighting Designers: Robert Singer and Associates, Basalt, Colo.

PROFESSIONAL COMMERCIAL AWARD OF RECOGNITION, CREATIVITY AWARD

Project: SoBou, W Hotel, French Quarter,

New Orleans; **Lighting Designers:** Reveal Design Group, New York

PROFESSIONAL COMMERCIAL AWARD OF RECOGNITION

Project: Hilton Columbus Downtown, Columbus, Ohio; **Lighting Designers:** Tec Studio, Columbus, Ohio

STUDENT WINNER

Project: Permeating by Light—The Harlem School of the Arts, New York; **Student:** Huanhai Cheng; **School:** Parsons The New School for Design, New York

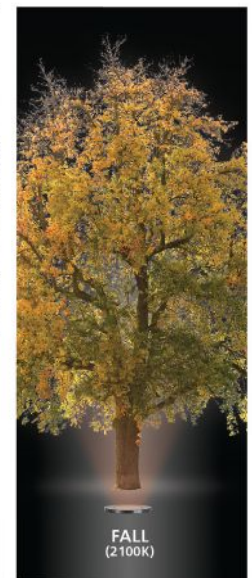
STUDENT HONORABLE MENTIONS

Project: Hermes Men's Showroom; **Student:** Ali Kidwell; **School:** Auburn University, Auburn, Ala.; **Project:** Escalope; **Student:** Graysen Miller; **School:** Mississippi College, Jackson, Miss.; **Project:** PADI Americas Headquarters Expansion; **Student:** Christina Careccia; **School:** The Art Institute of California, San Diego; **Project:** Bloomingdale's Corporate Office; **Student:** Ana Darice Payan; **School:** The Art Institute of California, San Diego •

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CANDACE M. KLING, FIALD, 1945-2013

The lighting community loses a respected practitioner.

Lighting designer Candace M. Kling, FIALD, known to family, friends, and colleagues as Candy, died on March 26. The cause of death was a heart attack.

Kling spent more than 40 years in the lighting industry, beginning her career in the theater. Following a high school passion for stage lighting, she worked as an assistant to Broadway lighting designer Jean Rosenthal, who designed the lighting for such noted productions as *West Side Story* and *Fiddler on the Roof* in the 1950s and 1960s.

After her internship with Rosenthal, Kling transitioned from theatrical lighting to architectural lighting. In the process, she worked for leading lighting designers Howard Brandston, FIALD, and Jules Horton.

An opportunity to work for Marriott in their hotels division as their in-house lighting designer moved Kling from New York City to the Washington, D.C., area. It was one of the first instances of a hotel chain enlisting a lighting designer to oversee the lighting of their properties in such a dedicated fashion. Kling was responsible for creating lighting guidelines for the hospitality industry, guidelines that sought to support design while still meeting the day-to-day demands of maintaining global properties.

In 1980, Kling opened her own practice: C.M. Kling Light Design in Alexandria, Va. As the firm grew, the company name was changed to reflect

that and became C.M. Kling and Associates.

With more than 2,500 projects worldwide to her firm's credit, Kling's work was characterized by sophisticated and thoughtful design strategies that focused on creating quality-lit environments. In 1991, the firm received a GE Lighting Award for its work on the main façade of Washington National Cathedral. Other notable projects include the Walter E. Washington Convention Center in Washington, D.C., and BC Place Stadium in Vancouver, British Columbia.

Kling's contributions to the lighting community spanned well beyond her design work. She was a member of the Illuminating Engineering Society and served as the chair of its Progress Report and Hospitality Committees. She was also a member of the International Association of Lighting Designers (IALD) to which she was named a Fellow in 2010. In addition, she served on the IALD Membership Committee and the Board of Directors, as well as the LIRC Steering Committee.

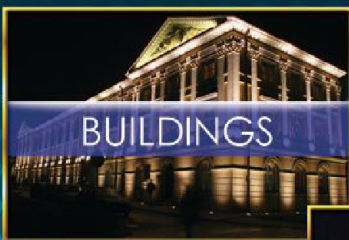
An ardent supporter of students and young professionals, she gave generously of her time and finances to the IALD Education Trust. David Ghatan, who worked for Candy for a number of years, and who will lead the firm going forward as principal, remembers her fondly. He said, "Candy's inextinguishable light shined on many throughout her life, and will continue to be an inspiration." •

Courtesy C.M. Kling and Associates



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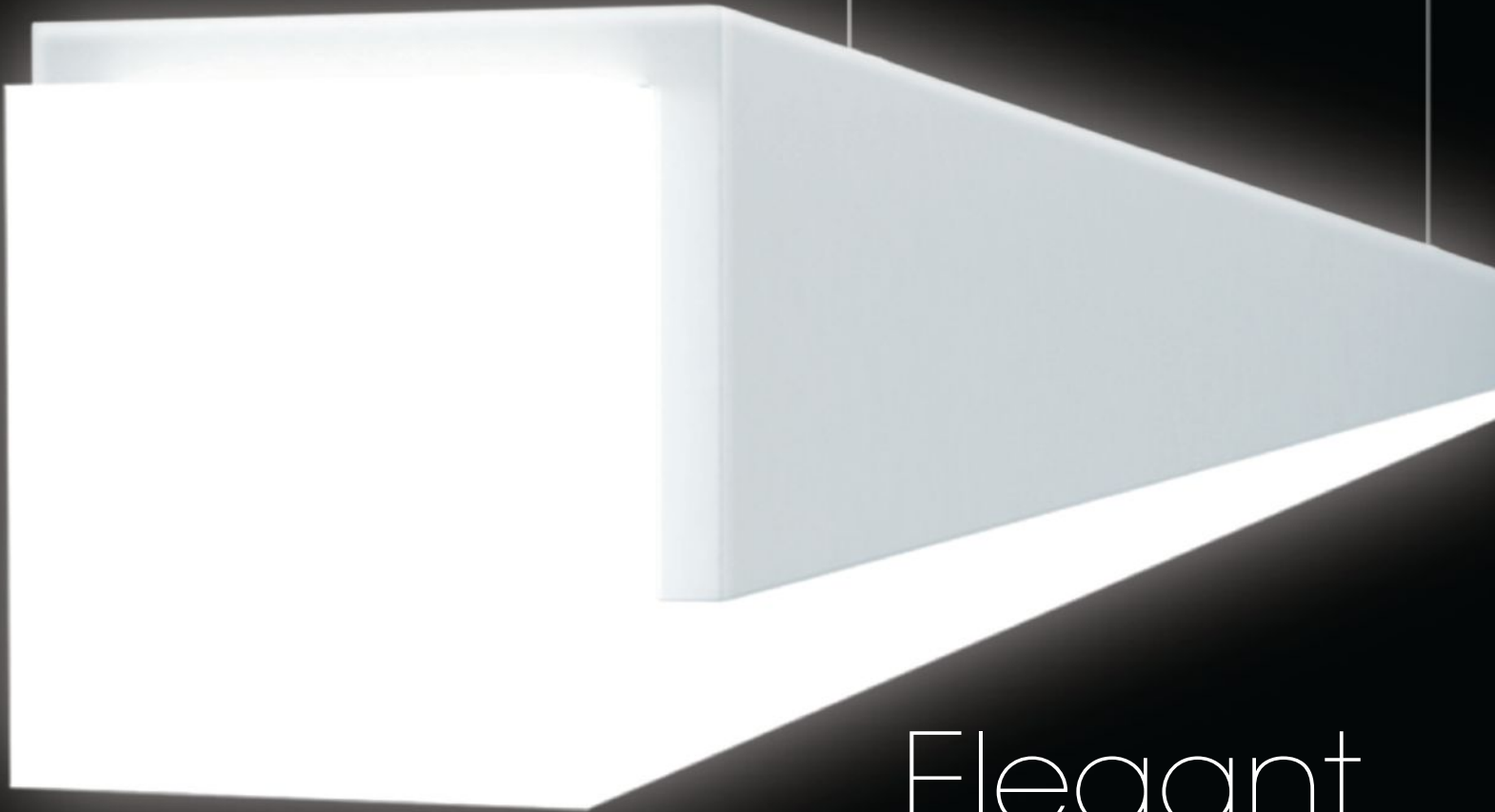


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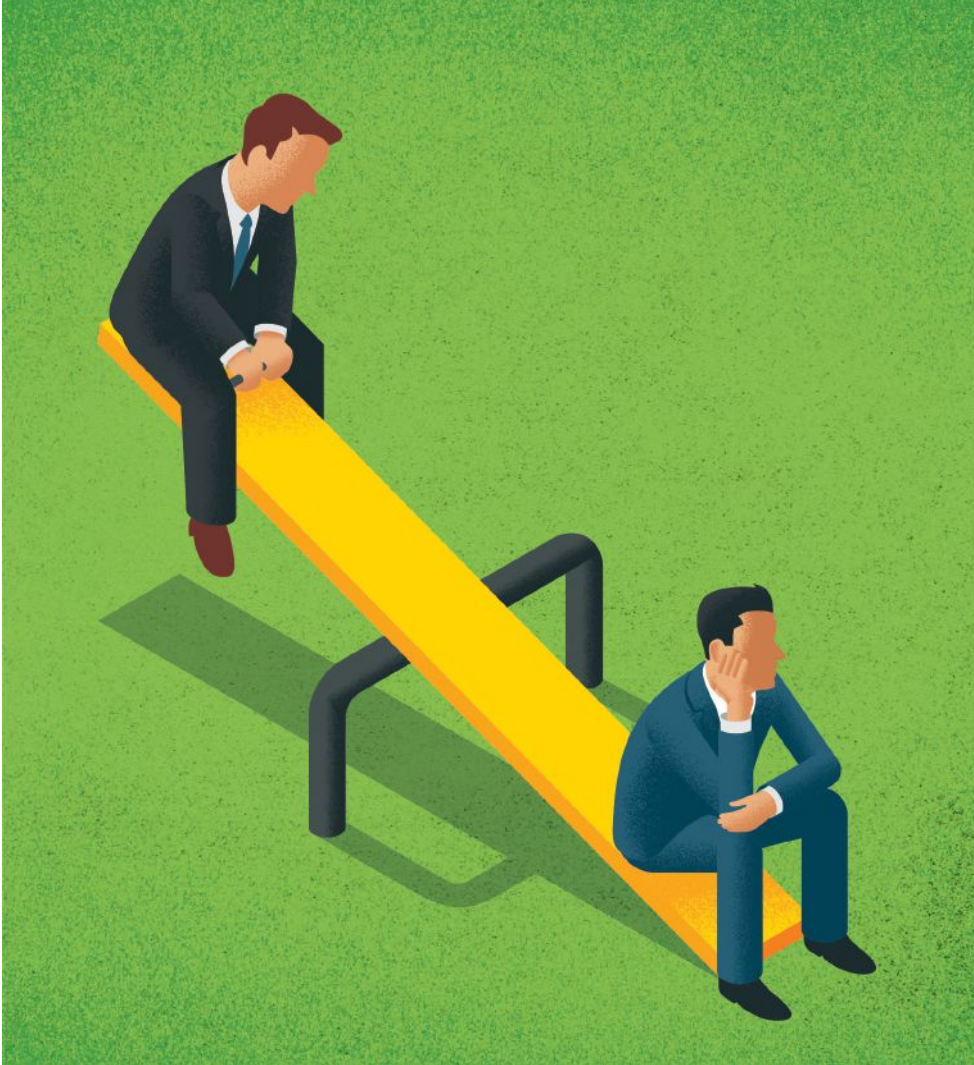
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PROFESSIONAL PRACTICE

PARTNERSHIPS, COLLABORATIONS, AND TRANSITIONS

Ways to structure collaborative working relationships for a positive outcome.

text by Peter J. Lamont

illustration by James Provost

Peter J. Lamont is a business and commercial litigation attorney nationally recognized in a wide variety of highly specialized areas within the kitchen, bath, lighting, construction, and design industries. He routinely represents various national and international companies within the design sector, and has achieved the highest rating in both legal ability and ethical standards as awarded by AVVO (avvo.com).

Independent lighting designers and smaller design firms face a number of challenges that large firms do not often encounter. For example, cash flow and staffing are two major challenges. Larger firms can easily hire designers and staff, primarily because they have the cash flow to do it and a steady stream of new business to keep new employees busy. Small firms may need the help, but are often unable to afford a staff or sometimes even just an extra employee. In addition, small firms and independent designers face the challenge of making the most of their major business and design decisions on their own. Large firms, on the other hand, can bounce ideas around among their designers and staff members.

To address these disadvantages, smaller firms and individual designers often turn to partnerships and collaborative agreements. This is a way to maintain or grow their business or to solve a number of other challenges, such as financial concerns. While the old adage “strength in numbers” often holds true, lighting designers seeking to build strength through partnerships or business collaborations need to be aware of the benefits and risks associated with each.

In addition, regardless of how successful an alliance is, all good things must come to an end—either because a partner retires, a project ends, or creative differences develop. It is important that there is a strategy in place for transitioning out of any business or relationship.

PARTNERSHIPS

For many designers, a business partnership can sound very appealing. Aligning with someone who has a complementary skill-set and a like-minded vision may be beneficial from a financial, intellectual, and creative standpoint. The benefits of a union include the ability to draw on a wider pool of administrative and business resources, design knowledge, individual overhead, and cost reduction. A collaboration also could enhance your reputation and credibility, increase efficiency, and boost the ability to pool connections in order to develop new leads.

Being a small business owner can be intimidating and stressful; it requires a significant amount of confidence, tenacity, and resilience. The idea of risk sharing can be very appealing. Finding the right business partner can be favorable for you and your company, so long as you take the right steps and avoid the following stumbling blocks.

PITFALL #1: LACK OF PROPER FORMAL AGREEMENT

The most common mistake made by designers entering into a partnership is not having a

formal and comprehensive written partnership agreement, and this oversight ends up leading to the majority of disputes. Often, even when there is an agreement, it fails to address potential points of contention between the parties involved.

Prior to forming an official partnership, it is critical that all of the designers involved sit down to discuss their expectations from each other, as well as their expectations concerning their specific goals. A key factor at this stage of the partnership is transparency. Each designer needs to have a good understanding of what each individual is bringing to the table. Transparency is essential to creating a good partnership and a strong business relationship.

PITFALL #2: USING A PARTNER AS AN EMPLOYEE

Another common misuse of cooperative working relationships comes when the motivation stems from using the relationship as a way to increase staff without making any direct hires. This is a common theme seen in partnership litigation.

For example, let's say that Designer 1 has a design vision and needs help but cannot afford an employee. So he partners with Designer 2. Designer 1 does not want to compromise on his initial vision but rather wants Designer 2 to help him realize it. Designer 2, meanwhile, believed that the process would be collaborative. When Designer 2 realizes that he was really brought on to act as an employee, he finds himself responsible for all of the business's liabilities and obligations. A better solution for Designer 1 would have been for him to hire Designer 2 as an independent contractor.

PITFALL #3: JOINT AND SEVERAL LIABILITY

One of the main concerns with any business affiliation is that each partner has unlimited personal liability for the debts and obligations of the partnership. As colleagues, each has the authority to bind the other, so one person may be liable for the debts of the other even if he was unaware that the other individual was incurring debt.

With a partnership, either person's personal assets can be seized by creditors if the business defaults on its obligations. The legal term for this is joint and several liability. This means that each partner, as well as the partnership as a whole, is liable for 100 percent of any obligations incurred.

One option that associates can use to protect themselves against personal liability is to obtain business liability insurance and to structure agreements with third parties, including, but not limited to, creditors, which can absolve the issue. There are also a number of legal options that can help to protect

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individual partners. These involve using a corporate business entity as a general partner, but such a strategy is complex and should not be attempted without the assistance of a knowledgeable business attorney.

Or, if you're contemplating a partnership arrangement but are uncertain whether the potential benefits would outweigh the potential risks, you should take a look at a limited partnership. This arrangement can carve out exceptions where the limited partner is not liable for the actions or obligations of the general partner, but the general partner can receive all of the benefits from the partnership. When attempting to form a limited partnership,

it is generally advisable to have an attorney draft the agreement.

A third option would be to structure a business relationship whereas the partners agree to share expenses instead of capital. Sharing only expenses will make it much easier to part ways should the partnership end up not being what you expected.

COLLABORATION

Instead of pursuing a partnership, many designers decide to collaborate with their colleagues. Collaboration can involve a limited number of projects, or it can extend to individual clients and beyond. As with

partnerships, when discussing collaborative efforts, there should be numerous meetings between yourself and your colleague before jumping in. During these initial meetings, you need to state your expectations and limitations. Ultimately, a written agreement should be prepared so that each party fully understands their rights, obligations, and limitations.

Regardless of the size or impact of your collaborative effort, having a written agreement is paramount to a successful relationship. While concerns over financial liabilities may not be an issue in a collaborative approach, damage to one's reputation and image, as well as general liability, is always a concern. Therefore, it is critical to establish each party's workload and the amount of credit that each should expect to take for the project.

This theme of credit comes up commonly in litigation surrounding collaborative business arrangements. For example, each party may have contributed a similar amount to a certain design, but one person happens to speak openly to industry partners about their work on the project, giving the impression that they were the principal designer. A number of suits related to situations like this have been filed, alleging tortious interference with business or even fraud. If a designer is concerned about the impact of working with another designer or firm, or with the potential loss of control or recognition, he should instead consider retaining the services of that colleague as an independent contractor.

If you choose to go this route, you will need an independent contractor agreement to protect yourself and limit your liability, all while alleviating your concerns over a lack of industry recognition. Hiring someone as an independent contractor can also provide a cost-effective alternative to obtain the benefit of a colleague's knowledge and experience.

TRANSITIONS—EXIT STRATEGIES

No matter how successful a partnership or collaboration, you must not overlook an exit



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strategy. Most designers enter into the venture expecting nothing but the best from their partner. There is nothing wrong with being optimistic, so long as both people realize that there is a possibility that it could go horribly wrong. If you think of this relationship as a marriage, then think of an exit strategy as the equivalent of a prenuptial agreement. Having a pre-determined exit strategy helps keep the business on track, maintains clients, and avoids implosion and ruination of the business.

Transitioning out of the partnership or collaboration can be relatively uncomplicated, so long as the contract between the parties addresses issues of company ownership, client management, financial issues, and related items. For example, let's assume that two designers entered into a partnership and their agreement explicitly discussed what would happen if one partner wanted to disassociate himself from the partnership. In other words, the agreement addressed what monies would be paid out, how existing projects and clients would be handled, what information would be provided to those clients, and an explanation as to what the retreating partner would be liable for.

By addressing how to dissolve the partnership at the time that it is formed, when one partner does decide to leave, then the plan is already in place for his departure. It's simply a matter of following the rules laid out in the agreement.

Of course, when money is involved, it's never that simple. One partner will always believe that he is entitled to more money than the other. While having a pre-negotiated exit strategy can simplify the departure of one partner, there are bound to be snags, so have an attorney prepare the exit strategy or dissolution agreement. Even if you decide to create your own partnership agreement or collaboration contract, it is worth having an attorney draft the dissolution provisions. In the long run, it can save you a tremendous amount of money in attorney's fees.

TRANSITIONS—CLOSING A BUSINESS

While a transition can refer to the dissolution of a partnership or collaboration, it traditionally refers to the sale of the business. Unfortunately, most owners or partners have no idea how to properly sell their business and its assets to an interested buyer, and how to do so while still turning a profit. That is why we see more design businesses closing, instead of being purchased or being acquired by another firm.

How to transition out of a business shares several themes and similarities with how to dissolve a partnership, just on a much larger scale. When selling a functional business, it is imperative that the owners employ financial advisers, attorneys, and certified public accountants to assist them. The financial

hazards alone can lead to the ruin of the business's owners. It is not uncommon for a successful design business with a significant amount of assets to end up in the red as the result of a failed transition.

Partnerships and collaborations can definitely benefit individuals and design firms. However, it is important to take into account all of the variables that can go wrong before you decide to form such a relationship. While you should

hope for the best, always prepare for the worst. If your potential partner or collaborator is not interested in having a meaningful discussion about the potential pitfalls (or if he refuses to sign a partnership agreement or to discuss an exit strategy), you should think twice before entering into a relationship with them. Through proper preparation and planning, you can build meaningful and successful business relationships. The key to each's success is to address how to deal with problems before they arise. •

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• DESIGN

IN FOCUS

HARRY WINSTON SHANGHAI PAVILION

CBBLD uses color temperature to showcase diamonds, and customers, in the best possible light.

text by Deane Madsen

photos by Andrew Rowat



The store's entrance, designed to read like a vertical marquee, is highlighted to each side by a row of PAR46 wide floodlamps (previous page). Inside the store, the double-height space is illuminated with a combination of 4000K ceramic metal halide accentlights and 3000K covelights (top). In the private sales rooms, a custom-designed system of cool (4000K) and warm (3000K) lamped fixtures work in concert to highlight the client's face and the jewels (above left). Dimmers at the desk allow the salesperson to individually control the fixtures (above right).

Xintiandi, a neighborhood of traditional *shikumen* (stone gate) houses just outside the center of Shanghai, in an area once known as the French Concession (1849–1946), is poised to become the city's luxury shopping district, as several new high-end retail developments replace historic row houses in this 27-square-block, pedestrian-oriented area. The neighborhood is part of a larger master rehabilitation plan for the center of Shanghai, being overseen by Skidmore, Owings & Merrill.

It is within the Xintiandi development that diamond purveyor Harry Winston chose to capitalize on this urban transformation and locate its flagship store in the now-trendy locale. The designers behind the store concept and layout are Studio Sofield, who oversaw the interiors and new façade, and Cline Bettridge

Bernstein Lighting Design (CBBLD), who lent their lighting expertise.

At Harry Winston, the client comes first, followed closely by the company's trademark diamonds—both of which CBBLD was asked to cast in the best possible light. As lighting designer and CBBLD principal Francesca Bettridge explains, this particular location served as a prototype for the retailer to showcase new ideas for merchandising and branding. But for the store to stand out in the already visually compelling atmosphere of Xintiandi, Studio Sofield wanted something eye catching to entice potential customers. For this, CBBLD devised a design that responded to a request from Studio Sofield principal Bill Sofield: to make the entrance feel like a vertical marquee. "We eventually came up with a

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detail that's a PAR 46 lamp with a wide flood," Bettridge explains. The fixtures are dimmed to a light level that draws attention without blinding passersby (approximately 30 percent). CBBLD also added 3000K LED strips beneath each of the three steps leading up to the store's entrance, so that the steps and the entrance façade appear to float.

Once inside the store, the focus is on the jewelry. "With diamonds, you can't put enough light on them," Bettridge says. "Diamonds like small point sources because they capture the many facets [of the gems]. They like cool-temperature sources—4000K or slightly higher." To highlight the jewelry on display, the custom wall vitrines have 4100K LED strips, vertically oriented and concealed from view, positioned inside and tucked up in a slot. Working in concert, but not visible to the shopper are 4000K LED spotlights with a few 3000K LED spots to highlight the colored gems. All of the free-standing display cabinets contain miniature 4000K LED striplights to illuminate the jewels. In the public areas of the store, additional 4000K ceramic metal-halide accentlights are aimed directly over the cases. Illuminated coves, outfitted with 3000K white LEDs, provide ambient light, while the private sales rooms upstairs employ a combination of coves and wall sconces to create a more residential feel.

The main challenge for CBBLD lay in the fact that while diamonds may like cooler light (preferably in the 4000K range), people generally look better under warmer light (3000K and below). In a retail environment, where clients are trying on jewelry in front of a mirror, the goal is to make both the jewelry and its potential buyer look as attractive as possible. After several in-house mock-ups, CBBLD came up with the appropriate combination of sources with just the right beam angles in which to position the luminaires so that they would simultaneously illuminate and highlight the client and the jewels.

In the private sales rooms, where the architecture and lighting are designed to make the customer feel at home, the real sales magic happens with more subtly placed luminaires. Above the desk, three recessed fixtures with 4000K 10-degree lamps aim straight down on the desk highlighting the diamonds. Behind and above the sales person, two recessed accent fixtures with 3000K MR16 floodlamps cast a warm glow on the face of the guest. Adjacent to those fixtures, two cool spotlights with narrow beams (10 degrees) are aimed toward a client's chest, so that if a client puts on a necklace, the jewelry comes alive, sparkling. Dimmers underneath the sales desk allow these two sets of fixtures to be individually controlled. It

wasn't until Bettridge had the opportunity to demonstrate the individual controls for those fixtures that the representatives from Harry Winston fully realized what a transformative experience that CBBLD had created.

"When we were demonstrating the lights, I sat in the salesperson's chair, and slowly increased the warm colors," Bettridge explains. "Then one of the salespeople sat in the guest's chair and put on this unbelievable necklace of diamonds and sapphires. Underneath the desk, I turned on the spots aimed at her chest, and it was as if the necklace burst into flames." Wall-mounted mirrors—adjacent to seating and table areas—have custom-designed sconces with 3000K warm-white T5 fluorescents, vertically positioned along the height of the mirror, to bathe the client in warm light, while another custom-designed, dimmable 4000K cool-white LED accent fixture above the mirror highlights the jewelry below shoulder level.

With the success of the Shanghai store's lighting prototype, CBBLD is now involved in retrofitting and designing the new stores for the rest of Harry Winston's showrooms worldwide with the same warm-and-cool lighting strategy in each's private sales area; this has become the standard setup for the retailer. In the jewelry business, that's the kind of sparkle that sells. •



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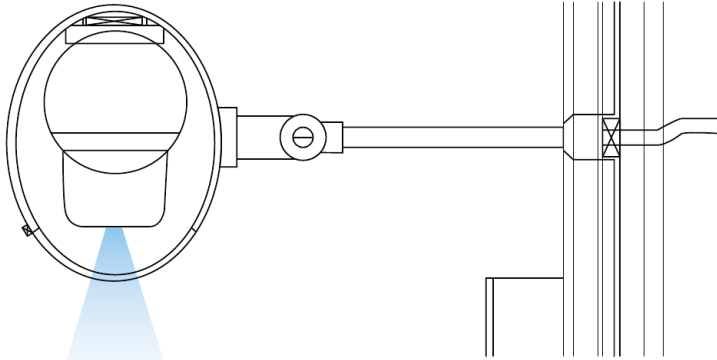
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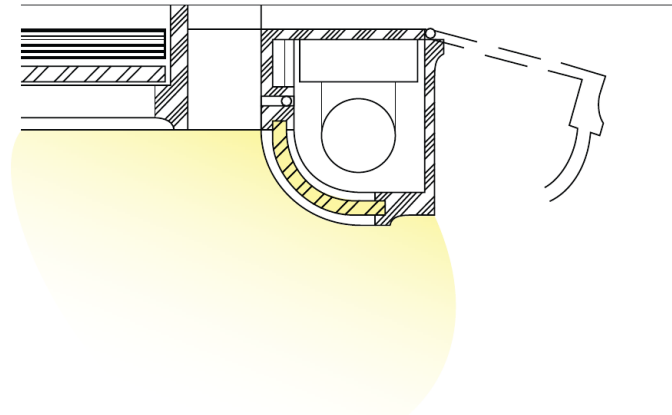
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Mirror Accentlight Section View



Mirror Wall Sconce Plan View



Detail drawings of the custom-designed 4000K cool-white LED linear accentlight located at the top of the mirror (left), and the 3000K warm-white T5 wall sconces (right), which are on the wall adjacent to the seating and table viewing areas in the private sales rooms.

Drawings courtesy CBBLD

Details

Project: Harry Winston Shanghai Pavilion, Shanghai • **Client:** Harry Winston, New York • **Architect:** Studio Sofield, New York • **Architect of Record:** Gruen Associates, Los Angeles • **Lighting Designer:** Cline Bettridge Bernstein Lighting Design, New York • **Project Size:** 5,800 square feet • **Watts per Square Foot:** Complies with ASHRAE 90.1 • **Energy Compliance:** Complies with local code • **Manufacturers/Applications:** Erco (3000K, 70W T6 metal halides at skylight exterior); GE Lighting (3000K white, surface-mounted linear LED steplights at entrance); Lucifer (3000K and 4000K MR16 luminaires at private sales rooms); Philips Color Kinetics (3000K white linear LED cove lights); Specialty Lighting Industries (3000K linear, recess-mounted LED wallgrazer); Viabizzuno (4100K white, surface-mounted LED vitrine lights)

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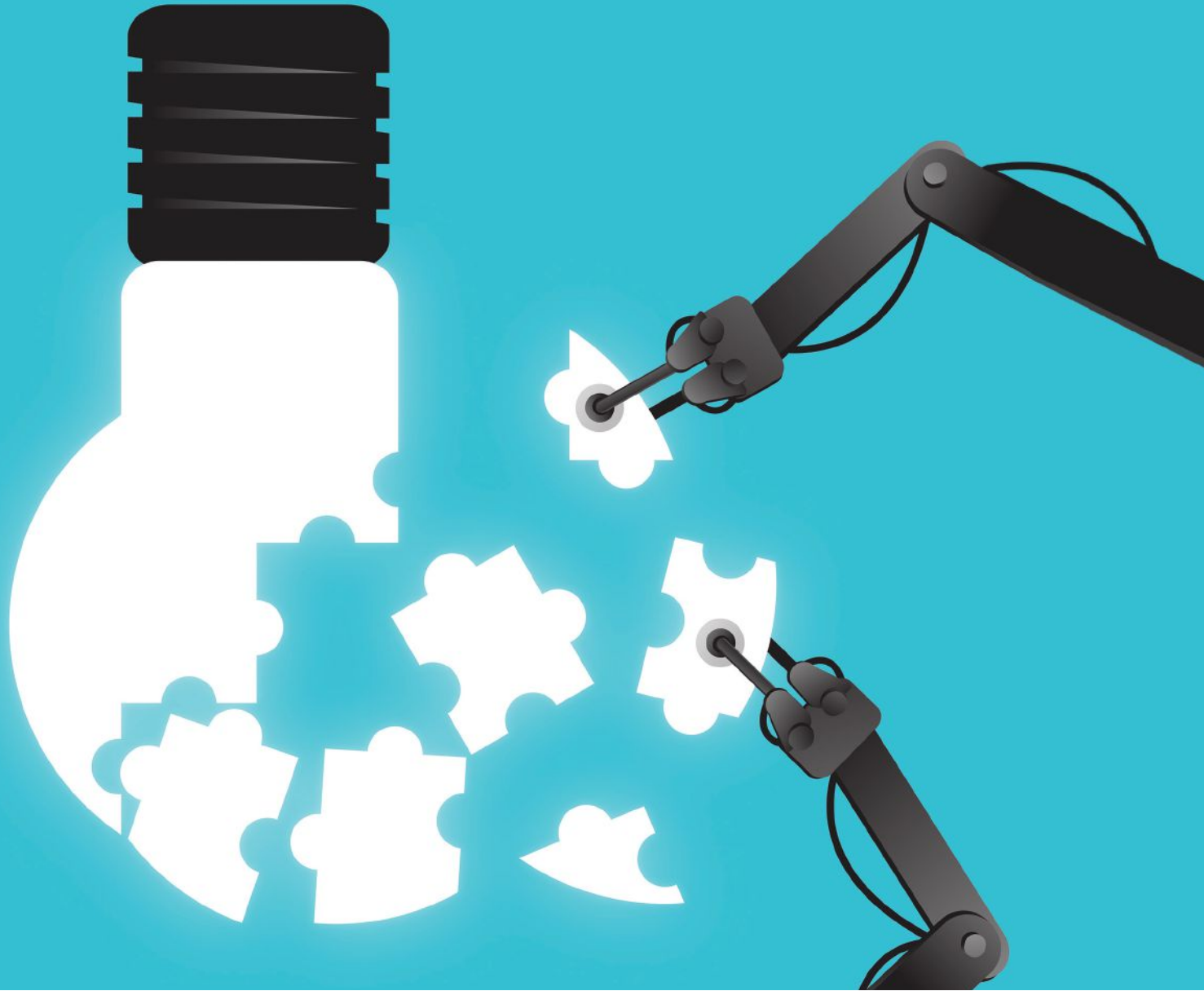
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Each year brings new breakthroughs in the lighting industry. Recent advances in materials and manufacturing indicate that 2013 will be a standout year, particularly in terms of unleashing creative potential. Achievements to date include manufacturing breakthroughs that have delivered record-breaking luminous efficacies at more accessible price points; enhanced capabilities in lighting materials and optics fabrication; and the exploration of new form-factors based on digital manufacturing and other processes.

BREAKING BARRIERS

Advances in lighting materials enable the pursuit of ever-higher performance benchmarks. Manufacturers are incorporating new technological capabilities within appropriately retooled assemblies. For example, more-luminous high-voltage LEDs are now paired with smaller, higher-efficiency drivers than their predecessors, thus constituting a double breakthrough. The quest for higher efficacies continues into unprecedented levels when it comes to solid-state technology, with the promise of delivering desired illumination levels with fewer lamps and less energy.

Cree recently announced the attainment of 276 lumens per watt in white LEDs under laboratory conditions—a new industry record, besting the earlier milestone of 254 lumens per watt. This level of efficacy was reached using Cree's SC3 technology platform, which boasts a redesigned package that has lower thermal resistance and a larger dome for enhanced light extraction. Meanwhile, advances in phosphors and LED chip architecture have resulted in better efficiency at converting electricity into light.

Also breaking records are manufacturer Green Ray LED Lighting, which has surpassed the fluorescent lamp efficiency barrier with a 173-lumen-per-watt LED replacement for T8-type tubes, and Philips, which developed a TLED (an LED tube) prototype with a 200-lumen-per-watt output. Though these higher efficacies do not guarantee better light quality—the lux can be inappropriately distributed—it does signal the capability to provide more illumination with less power, and therefore lower cost and energy consumption.

The NEWLED project, a research effort funded by the European Union's Seventh Framework Program, aims to increase the efficiency of white LEDs based on the manufacture of superlattices—sophisticated packaging that allows for superior heat dissipation and light management. "Common light bulbs have a pretty low efficiency

rating, and even the best current white LEDs in use only have an overall efficiency of around 25 percent," said Edik Rafailov, the project's leader and a physics professor at the University of Dundee, Scotland, in a press release. "What we are aiming to develop is a significantly more efficient white LED, which would be around 50 to 60 percent efficient. ... The effects on overall energy consumption would be enormous."

MANUFACTURING MAKEOVERS

In addition to achieving new performance benchmarks, lighting manufacturers are also breaking cost barriers. This spring, Cree unveiled an LED A19 replacement lamp around the \$10 mark, making a more accessible entry price point for consumers who are interested in switching to solid-state lighting. Based on the company's LED Filament Tower technology, the lamp consists of an optically balanced source that provides 25,000 hours of illumination, according to the manufacturer. Cree achieved the cost reductions by implementing a higher-performance solid-state technology, notes John Edmond, Cree co-founder and director of advanced optoelectronics.

Further cost reductions in LEDs will be possible as manufacturing processes continue to be transformed. The use of active thermal management instead of passive aluminum heat sinks, dimmable drivers rather than nondimmable ones, and secondary optics that optimize the beam shape and distribution of primary optics will, in combination, allow for more precise control and energy utilization. According to the independent research and advisory firm Lux Research, headquartered in Boston, industry attention has shifted from reducing the cost of the LED package to that of the overall system, which includes optics, drivers, and thermal management. The lack of established standardization in LED technology has allowed manufacturers to develop incremental cost improvements in these areas. Because they aren't beholden to a prescribed standard, they can pursue various methods to eke out performance gains.

Lighting manufacturers are also pursuing greater efficacies and performance by broadening the range of materials they employ. U.K.-based Plessey Semiconductors recently announced the creation of the first gallium-nitride-on-silicon (GaN-on-Si) LEDs constructed on 6-inch-diameter wafers. The large-diameter, GaN-on-Si process technology results in LEDs that are of similar quality to conventional sapphire and silicon carbide-based products, but can be made at a much lower cost. Compared with existing

These advances in technology and manufacturing reveal an industry in dramatic transformation.

GaN-on-Si manufacturing, which uses 6- to 8-micrometer-thick GaN layers, Plessey's approach uses 2.5-micrometer-thick GaN layers, thus improving material utilization.

NEW DIRECTIONS

Advances have also come in three dimensions. The ability to manufacture optical elements via 3D printing has led to shorter product development cycles and a more flexible, iterative process for designing lighting fixtures. Scientists at Carnegie Mellon University are collaborating with Disney Research to develop 3D printed optics for interactive devices. According to a 2012 paper that the research team published in UIST (ACM Symposium on User Interface Software and Technology), "unique display surfaces, novel illumination techniques, custom optical sensors, and embedded optoelectronic components can be digitally fabricated for rapid, high-fidelity, highly customized interactive devices."

Optics may now be printed on-demand using high-resolution transparent plastics at significantly lower cost than traditional manufacturing. These optical elements may also possess previously unachievable form-factors, such as the combination of multiple materials, structure-within-structure fabrications, and designs that integrate optical, as well as mechanical, structures. As a result, luminaires imbued with greater geometric and material sophistication are not only more affordable, but also made in less time and with less material and energy resources than ever before.

3D printing is not only transforming the manufacture of optical elements, but also the fabrication of entire luminaires. Sydney-based SandFlora Interior Lighting uses 3D printing to create LED- and CFL-based luminaires with sophisticated biomorphic geometries. The direct digital manufacturing process results in high-precision products with near-zero material waste. SandFlora's Waratah collection includes coordinated pendant, floor, and table luminaires that are suitable for commercial or residential interiors.

The Do-It-Yourself movement is driving

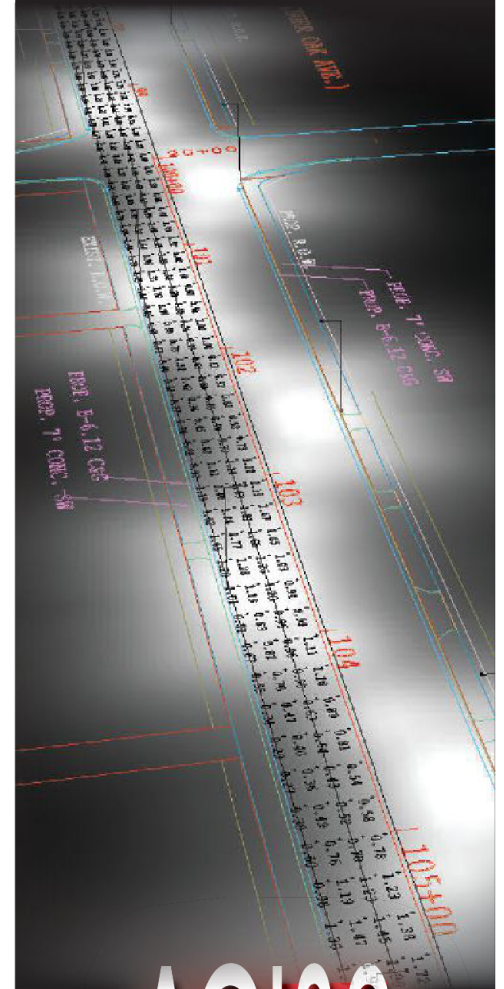
a lot of the experimentation in 3D-printed luminaires, with digital fabrication services like Shapeways, Freedom Of Creation, and .MGX enabling the rapid and relatively inexpensive production of complex fixtures. The Bloom Lamp, created by designer Patrick Jouin in collaboration with .MGX, is a 3D-printed table lamp with a dynamic shade. The lamp can extend its "petals" outward in order to emit more light or stay closed like a flower bud, releasing a soft glow through the opalescent shade. The Bloom Lamp is constructed as a single piece, including the hinges that enable the fixture to expand and contract.

In a similarly nascent stage of commercialization, OLED technology is witnessing creative approaches to its manufacture. LG Chem Power, which is developing the first high-efficiency, 80-lumen-per-watt OLED panels, plans to release the world's first flexible OLED lighting panels this July. Each 0.2-millimeter-thick flexible panel will be 200 millimeters by 50 millimeters in size and weigh 0.6 grams. Delivering an output of 45 lumens per watt, the panels exhibit a hybrid structure of fluorescent and phosphorescent emitters on a thin glass substrate. They will be manufactured with a face seal, which is a flexible encapsulation technology that combines and protects the thin glass substrate with a metal protective layer.

As a testament to the company's eagerness to test its new OLED manufacturing capabilities, LG Chem Power recently held an open OLED lighting design competition based on both flexible and rigid formats. The winning designs will doubtless push this evolving technology further.

These advances in technology and manufacturing reveal an industry in dramatic transformation. The outstripping of previous performance benchmarks, attainment of more accessible price points, and unprecedented material and fabrication capabilities give rise to an increasingly volatile environment—an environment in which it can be simultaneously thrilling and confounding for lighting professionals who are eager to maintain a technological and creative edge. •

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PRODUCTS

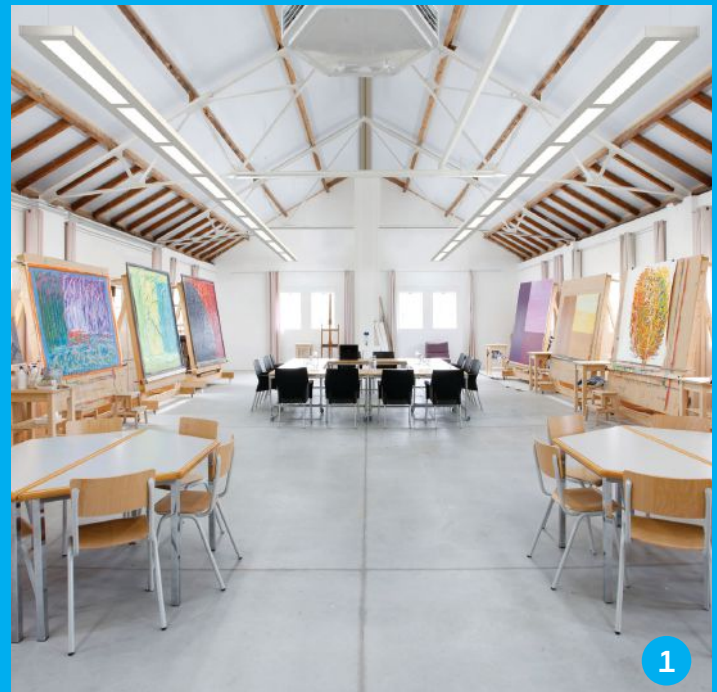
2013 LIGHTFAIR INNOVATION AWARDS

Judged by an independent panel of lighting professionals, four products were awarded top distinctions and 15 won best-of-category awards for product entries that showcase the best in exemplary design and innovation.

text by Jennifer Bickford

Lightfair's Innovation Awards program kicked off the April 23 opening of the annual trade show, held this year in Philadelphia. The program received 307 lighting-related product submissions in 15 categories representing 156 different manufacturers. The program is sponsored by Lightfair, the International Association of Lighting Designers, and the Illuminating Engineering Society.

This year's entries and winning products reflect the continued diversity of luminaire, light source, and lighting controls offerings, acknowledging the industry's shift to solid-state lighting, while still recognizing the full range of sources required by lighting designers. This year's products also represent the increasing level of sophistication associated with lighting products and their move toward an integrated approach with other building systems.



2013 LIGHTFAIR INNOVATION AWARDS JURY

Matthew Hartley, Energie Lighting
Howard Lewis, Lighting Alternatives
Kim Mercier, Lighting Design Innovations
Leslie North, Aurora Lighting Design
Marty Peck, Creative Lighting Design & Engineering
Jason Rainone, Abernathy Lighting Design
Lauri Tredinnick, Pivotal Lighting Design



1. Most Innovative Product of the Year

BOLDPLAY, PHILIPS • This suspended LED luminaire was also the winner in its category—Commercial Indoor (Linear Fluorescent, Troffers, Suspended, Surface, LED, OLED). • BoldPlay is an indirect/direct LED luminaire that uses proprietary MesoOptics and light guide technology to provide uniform light levels at the work plane. The judges awarded the luminaire with the “Most Innovative Product of the Year” distinction due to its “extraordinary performance with extreme spacing of up to 20’ on center with the photometrics to support it ... as well as providing a low-profile stylistic aesthetic.” With an efficiency of up to 106 lm/W, each 4’-long fixture is available in either 3,400 or 4,800 lumens, three color temperatures, and several profiles and finishes. Although the luminaire’s standard distribution is 70% up and 30% down, specifiers can refine light levels with a variable optics kit, in 80% or 100% down, to adjust the amount of downlight required. •

philips.com/ledalite

2. Design Excellence Award

LIGHT SHEET, COOLEGE LIGHTING • This LED lighting system was also the winner in its category—LED, OLED, Chips and Modules. • Light Sheet combines mechanical, electrical, and LED components together in a single flexible light source. Available in two thicknesses: 7mm (0.27”) and 12mm (0.47”), in widths from 1” to 11” and up to 8’ long, with a CRI of 80-plus and a choice of 3000K, 3500K, or 4000K, this ultrathin product requires no heat sink and can be mounted to any surface. Low-power LEDs produce up to 135 lm/W and are rated for greater than 50,000 hours of life (per L70). Light Sheet is dimmable from 1% to 100% using a 58V DC input power supply and includes a five-year system warranty. •

cooledgelighting.com



3. Technical Innovation Award

MOLDABLE SILICONES, DOW CORNING • This material was also the winner in its category—Non-Luminous Components and Specialty Hardware. • Lighter than glass, with increased heat tolerance over plastic, UV-resistant silicone is a high-transmittance material. It was cited by the jury “as a new customizable material to mold, guide, and transfer light. ... [with] the ability to incorporate complex shapes and micro-optics.” These innate qualities and its low optical loss make moldable silicones an ideal choice for secondary optic applications for both LED lamps and luminaires. Complex shapes and features, including small radii and undercuts, can be replicated accurately without draft angles, and thermal and moisture resistance provide additional protection for electronic equipment. •

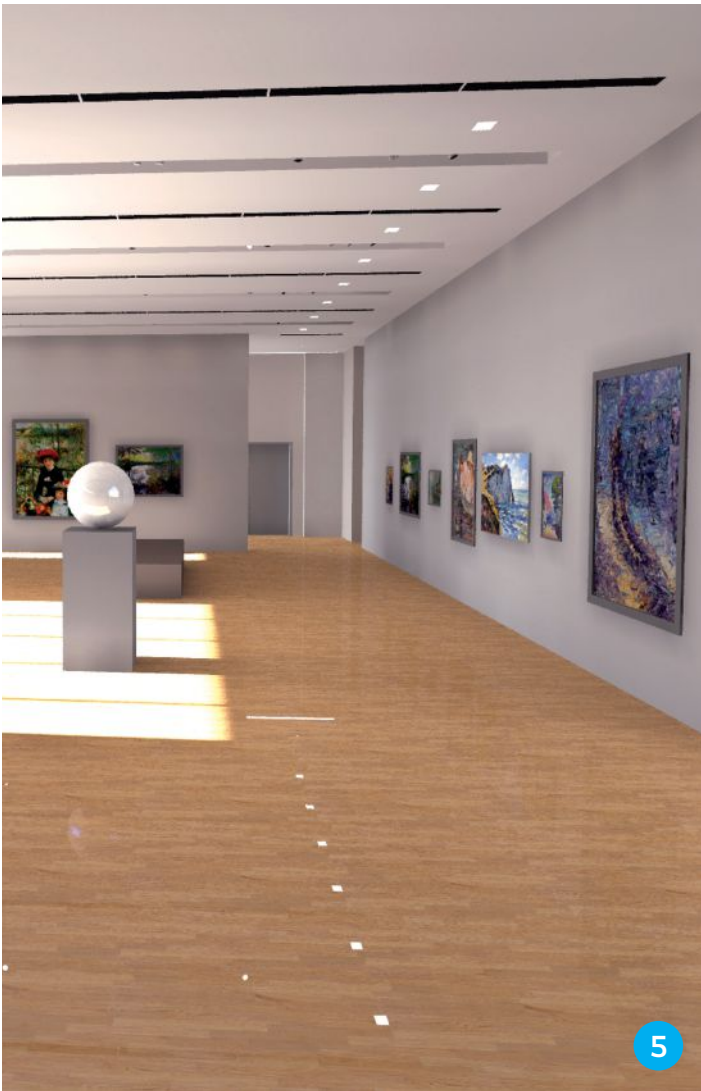
dowcorning.com

4. Judges’ Citation Award

HUE, PHILIPS • This wireless lighting system was also the winner in its category—Dynamic Color, Theatrical, Cove, Strips, and Tape. • Hue is a Web-enabled, picture-based, LED home lighting system available exclusively through Apple stores. The judges recognized Hue with a Citation Award because of the lamp and control system’s ability “to place the awareness of advanced color applications into the public’s hands.” The starter kit includes three LED lamps that fit any standard light fixture and a bridge that connects to existing wireless routers. The system can be controlled by any iOS or Android device, can achieve a CRI of 90-plus in the white range, and provides more than 16 million color customizations. At the beginning of May, Philips launched the next generation application for the system using the new Philips Hue channel on IFTTT (If This Then That). This allows the Hue system to work with any application programming interface (API) on the Internet. Additional features in v1.1 include geofencing and recurring scheduling. •

meethue.com/en-US and usa.lighting.philips.com





5



6



8

5. Category: Research, Publications, Software, and Measuring Devices

AGI32 VERSION 14, LIGHTING ANALYSTS INC. • Version 14 of AGI32 uses the mesopic multipliers detailed in IES TM-12-12 (“Spectral Effects of Lighting on Visual Performance at Mesopic Light Levels”) to refine the program’s calculation software for low-light applications, and it was for this “voluntary implementation” of the new standards that the jury recognized AGI32 Version 14 as the best in its category. The spectral performance of a light source can be expressed in terms of its S/P ratio: the scotopic luminous flux divided by the photopic luminous flux. Human visual performance in low-light environments has been shown to improve under whiter light sources, which typically have S/P ratios greater than one. Version 14 includes revised calculations to quantify this effect and show improved visibility at lower light-levels for exterior applications • agi32.com

6. Category: Conventional, Retrofit, and LED Replacement Lamps

OCTRON 800 XP XL SUPERSAVER T8 FLUORESCENT LAMPS, OSRAM SYLVANIA • The new Octron 800 XP XL Supersaver T8 fluorescent lamps, part of the company’s Ecologic3 line, has an extended lamp life of up to 84,000 hours on a T8 ANSI-rated ballast. As the jury noted, “This lamp will give even LEDs a real run for the money due to its incredibly long life.” Manufactured with lead-free glass, the 48” (nominal) lamp is available in standard 32W, as well as 28W, and 25W Supersaver (reduced wattage) versions. It includes Osram Sylvania’s five-year Quick 60+ warranty. • sylvania.com

7. Category: Ballasts, Transformers, and LED Drivers

HIGHHORSE CONTROLLABLE INDUCTION GENERATOR, FULHAM •

The HighHorse Controllable Induction Generator is a universal voltage generator that communicates instructions to induction lighting systems. It was selected by the jury “because it allows for the palette of outdoor fixtures to grow to include induction [options] for municipalities and departments of transportation.” This “smart” generator supports multiple wattage induction lamps with the same hardware and also reports details such as lamp performance, energy use, and other defined variables back to a user interface. Control functions are achieved via a wireless network or remote control, and motion sensing and daylight harvesting are also possible using Plug-n-Play technology. • fulham.com

8. Category: Solar, Shades, and Daylight Integration

SMART LED SYSTEM, SOLATUBE INTERNATIONAL •

The jury selected the Smart LED System as the best in its category because of the way in which it brings “two currently prominent technologies together in a potentially impactful new opportunity.” Similar to Solatube’s other daylighting systems, the Smart LED harvests sunlight during the day, but then uses a patented daylight sensor to switch to an LED lighting system at night. According to the manufacturer, this saves up to 94% on energy costs. The Smart LED System is suggested for use in hallways, bathrooms, closets, and entryways. • solatube.com



7



9

9. Category: Outdoor Luminaires (Sports, Step, Landscape, Pool, Fountain)

PRECISION 2 IN-GRADE WITH COLOR TUNING, B-K LIGHTING AND TEKA ILLUMINATION • An LED luminaire, the Precision 2 In-Grade with Color Tuning provides both tunable white light from 2700K to 6000K and full dynamic color in the same LED module, one of the features that made it stand out for the jury as the best in its category. Fixtures are controllable via a light-commissioning tool that uses a wireless network to enable individual control of on/off, dimming down to 5% output, correlated color-temperature modulation, and full saturation and hue control. A copy/paste function on a hand-held remote helps to easily match settings from one fixture to another. • bklighting.com

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10



11



13



14

10. Category: Controls, Building Integration, Site Automation, and Distribution Systems

HBA WASP2 DIMMING OUTDOOR OCCUPANCY SENSOR, HUBBELL LIGHTING • Acknowledged by the jury for its ability to bring “indoor control functionality to exterior environments in extreme outdoor temperatures,” the WASP2 Dimming Outdoor Occupancy Sensor is designed to provide zero-to-10V DC output for the control of dimmable LED, fluorescent, and HID fixtures. Through DIP switches, the user can set occupied and unoccupied dimming levels, and an integrated daylight sensor provides on/off control when there is sufficient natural light. Line- and low-voltage options are available and the sensor can be either end- or surface-mounted. It is also gasketed for wet locations and can withstand temperatures from -40 to 65 C. • hubbellighting.com

11. Category: Track, Display, Undercabinet, and Shelf

CIELUX T120 LED TRACKLIGHT, DICON LIGHTING • The Cielux T120 LED tracklight was selected by the jury as the best in its category due to its original use of an adjustable beam pattern in an LED trackhead that did not require additional accessories. The 25W LED tracklight is compatible with Halo track, features three correlated color-temperature settings, has a CRI of 90-plus, and can continuously dim down to 5%. A single, dense LED array produces defined shadows and a single-lensing option allows for beam angles of 16 to 50 degrees in a single fixture. • diconlighting.com

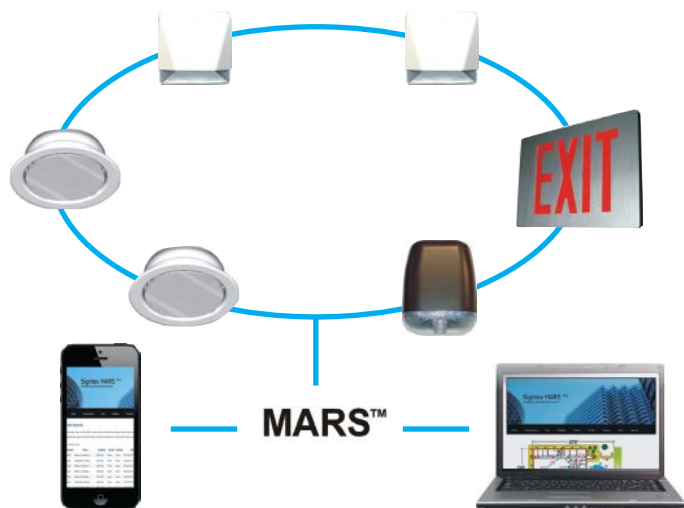
12. Category: Industrial, Vandal, Emergency, and Exit

CBM CENTRAL BATTERY WITH MONITORING AND REPORTING SYSTEM, SIGNTEX LIGHTING • CMB is an integrated emergency lighting system that uses central batteries to power remote LED emergency fixtures and exit signs. Automated self-test diagnostics and status reports are available on-demand via an Internet communication. The system will also generate written records required by the Life Safety Code, and it was for this reason that the jury noted it as its best in category. They said, “This automates what, to date, has been a manual process.” High lumen outputs, efficient optics, and long lamp-life all contribute to a low life-cycle cost. • signtexinc.com

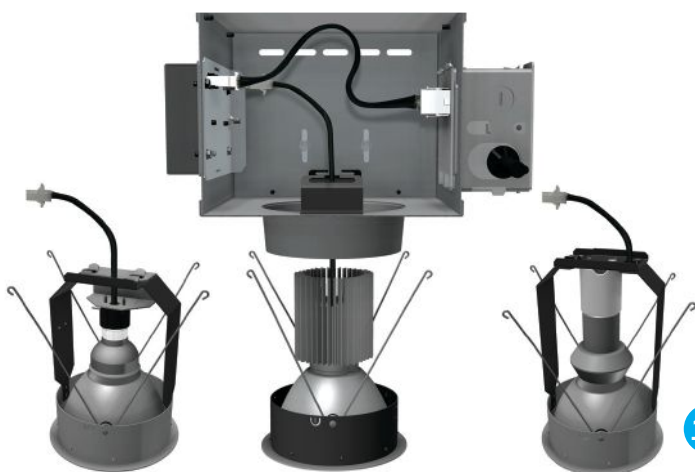
13. Category: Parking, Roadway, and Area Luminaires

EVOLVE LED SCALABLE COBRAHEAD ROADWAY LIGHTING, GE LIGHTING

• The Evolve LED Cobrahead Roadway Lighting series is a family of scalable fixtures designed to optimize roadway photometric distribution classifications. Because of this “scalability and a choice of four distributions,” the jury deemed it best in its category. Composed of high-brightness LEDs available in 4000K and 5700K with a CRI of 70, the light engine uses scalable reflective technology designed to increase efficiency and minimize glare. The IP65-rated fixtures are available in hundreds of photometric configurations, multiple voltages, and several mounting options. • gelighting.com



12



15

14. Category: Indoor Decorative (Chandeliers, Pendants, Sconces, Tasklights)

PLANAR SERIES HORIZONTAL CORE PENDANT, DIGITAL SPECK LIGHTING

• Available in two diameters—28" and 40"—the Planar Horizontal Core LED pendant uses 4000K LEDs at the pendant's aluminum "X" to edge-light blades of acrylic below. The judges recognized this luminaire as best in its category for "using LEDs for their inherent form factor, rather than trying to force LEDs into conventional aesthetics or exiting products." Each blade of acrylic uses an embedded microlens pattern to control glare and create a defined distribution. At the center is an optional 3500K Xicato downlight module in either 1,300 or 3,000 lumens. Constant current drivers are located in the ceiling canopy. • digitalspeck.com

15. Category: Recessed Downlights (Wallwashers, Directional, Modular, Multiples)

MULTISOURCE RECESSED LIGHTING SYSTEM, HUBBELL LIGHTING/ KURT VERSEN

• The MultiSource Recessed Lighting System is a series of universal housings spanning 10 product lines that can swap LED remote phosphor, LED MR16, LED PAR, metal halide light sources, and power supplies from below the ceiling using quick connectors. Each source has a specific optical assembly to optimize performance and control brightness. The modular footprint is adaptable to new technologies—the feature that made this stand out to the jury—and allows for a single-sized aperture look with several light source options. • hubbelling.com

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Model no.	Watt w	Flux lm	CRI	Beam angle °	Intensity cd
JZPAR38-C	14	770	80	24.40	3000/1600

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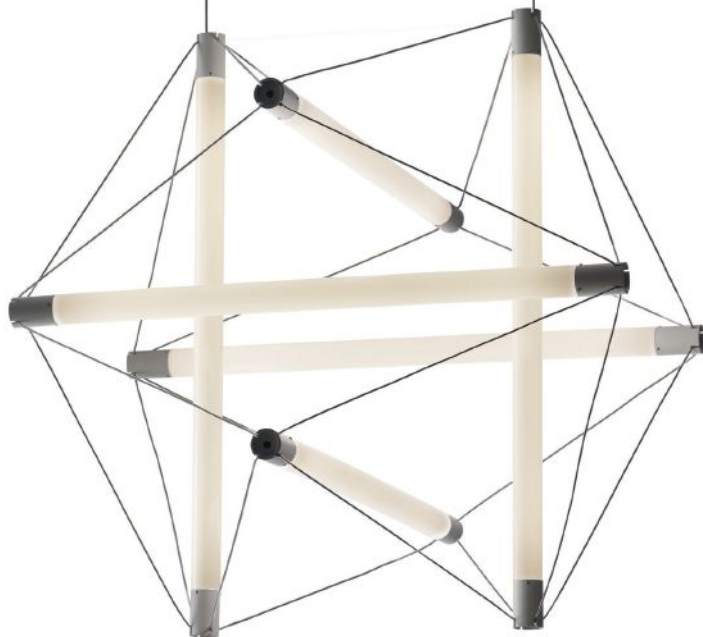
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PRODUCTS

EUROLUCE 2013

The lighting offerings at this year's show stood out with special brilliance.

text by Arlene Hirst



Ingo Maurer's Light Structure (right) and Knot table lamp (bottom right). Flos' reissue of Gino Sarfatti's table lamp, Model No. 548 (bottom left).



In what was considered a lackluster showing by major furniture manufacturers at Milan's Salone del Mobile this past April, EuroLuce, the biennial lighting show, stood out with a special brilliance. In terms of technical innovation and creative thinking, lighting has seized the lead. Advances in solid-state lighting have generated much of this excitement and LEDs propelled almost all of the product introductions on view. It was a striking contrast to EuroLuce 2011, where LEDs were in wide evidence, but the designs were mostly one-note. This year, however, imagination took wing, and all manner of shapes and forms appeared. According to Ilse Crawford, the English designer and a professor at the Design Academy Eindhoven in the Netherlands, furniture is passé; lighting is the field her students want to pursue.

LED-INSPIRED REVIVALS

Product revivals from a manufacturer's archives often play a role in a company's new product offerings, but this year's reissues meant major technical re-engineering to accommodate LED technology. The biggest splash was made by Flos, who reissued five fixtures by Gino Sarfatti, Italy's great 20th-century designer. Arteluce, the company he founded in 1939, was sold to Flos in 1973. Flos owns the rights to the Sarfatti archives, which it spotlighted at an exhibition of more than 600 of the designer's creations at Milan's Triennale Museum last fall. Rather than simply reproducing the forms and substituting an LED for the original incandescent source, Flos reengineered the lamps completely to accommodate the intricate relationship between diode, heatsink, reflector, and optical dimming sensor switch—a task Flos president Piero Gandini describes “as a very long and complex endeavor.” The first collection, which includes Model Nos. 548, 1063, 607, 1095, and 2129, is simply called Edition No. 1, and alerts us that more is to come.

Ingo Maurer also reached back into his archive and selected a 1970 design he created with Peter Hamburg simply called Light Structure:



ARCHITECT LIVE



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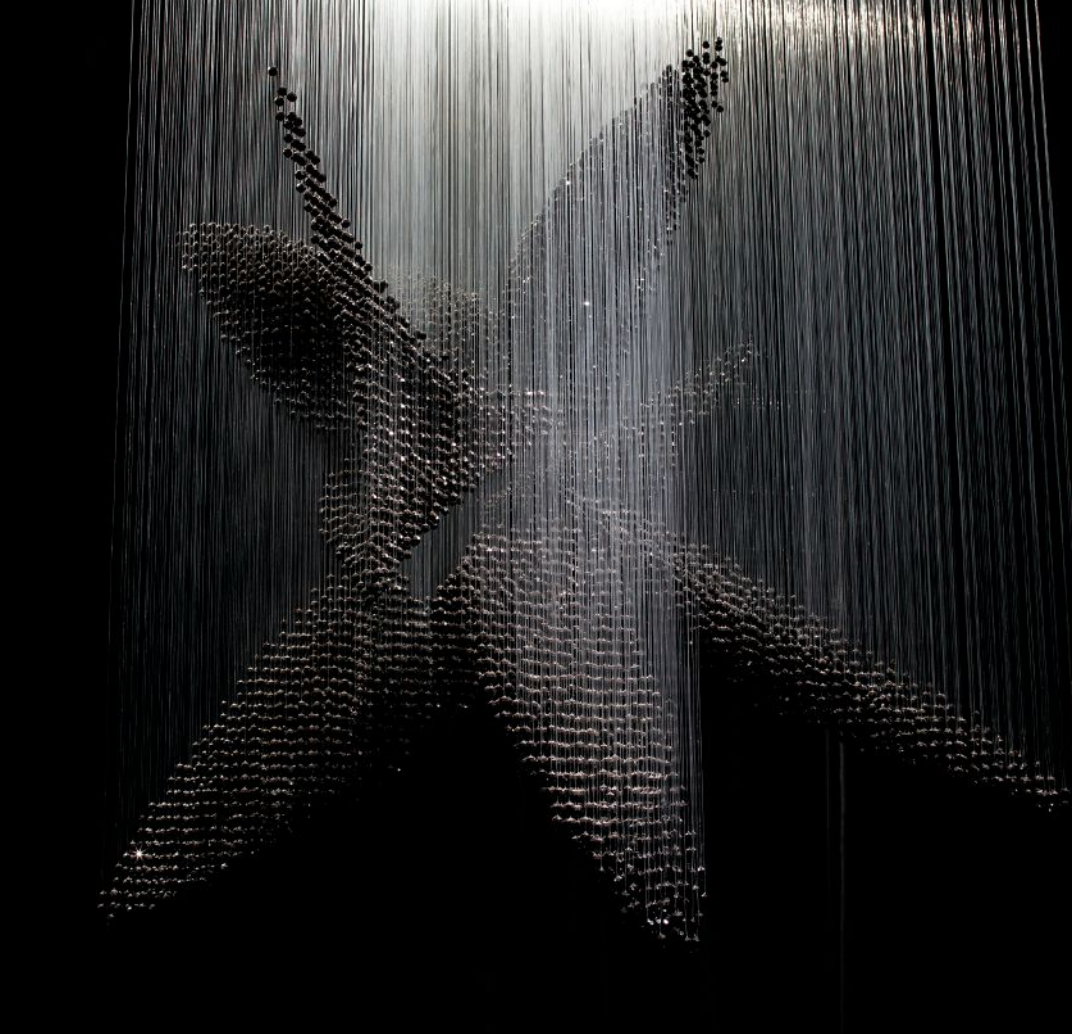
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Zaha Hadid's Swarm chandelier for Wonderglass (above), Lee Broom's crystal bulbs (above right), and Pallucco's reissue of the Fortuny Giudecca 805 floor lamp (far right).



six glass tubes connected and held in tension by insulated wire. For this reissue, Maurer has replaced the luminaire's incandescent lamps with LEDs.

RETROFITTING

So integral has LED technology become to lighting that many companies have refitted best sellers, no matter how recent—or old—they are. Case in point: Pallucco's reissue of the classic Fortuny Giudecca 805 floor lamp, originally designed in 1907. The metal fixture with its fabric cotton shade is now outfitted with a dimmable 48W LED.

LIMITED EDITIONS

This year, more designers created pieces that were either one-of-a-kind or limited editions. A new company, Wonderglass, made its debut, introducing chandeliers by Nendo, Jaime Hayon, Nao Tamua, and Zaha Hadid, whose work was in wide evidence throughout the Salone. Hadid's dramatic light sculpture, Swarm—a chandelier composed of intricately layered suspended black crystals—was especially brilliant.

ARCHITECTS BUILDING LIGHT

Besides Hadid, other architects also played

a role. Artemide produced work by Daniel Libeskind and Jean Nouvel, whose Objective table lamp is composed of three cylindrical volumes, all in painted aluminum, and hide the complexities of the technology within.

JUST BULBS

English designer Lee Broom set up shop in the center of Milan where he sold his 3.5-inch-tall cut crystal, traditional bulbs to all comers. His wares will fit any standard fixture and come either frosted or clear; sold singly or with a bright brass pendant fitting.

STATE-OF-THE-ART

Technology and new fabrication processes were also in evidence. Ingo Maurer used 3D printing technology to create the form for his Knot floor and table lamps, which are made of polyamide, steel, and aluminum.

Daniel Rybakken's Ascent table lamp for Luceplan turns on or off and adjusts in intensity simply by sliding the shade up or down, a feat accomplished by the use of a precise dimmer located in its head.

But this is all just a sample of what was on display in Milan. For extended Euroluce coverage go to archlighting.com. •



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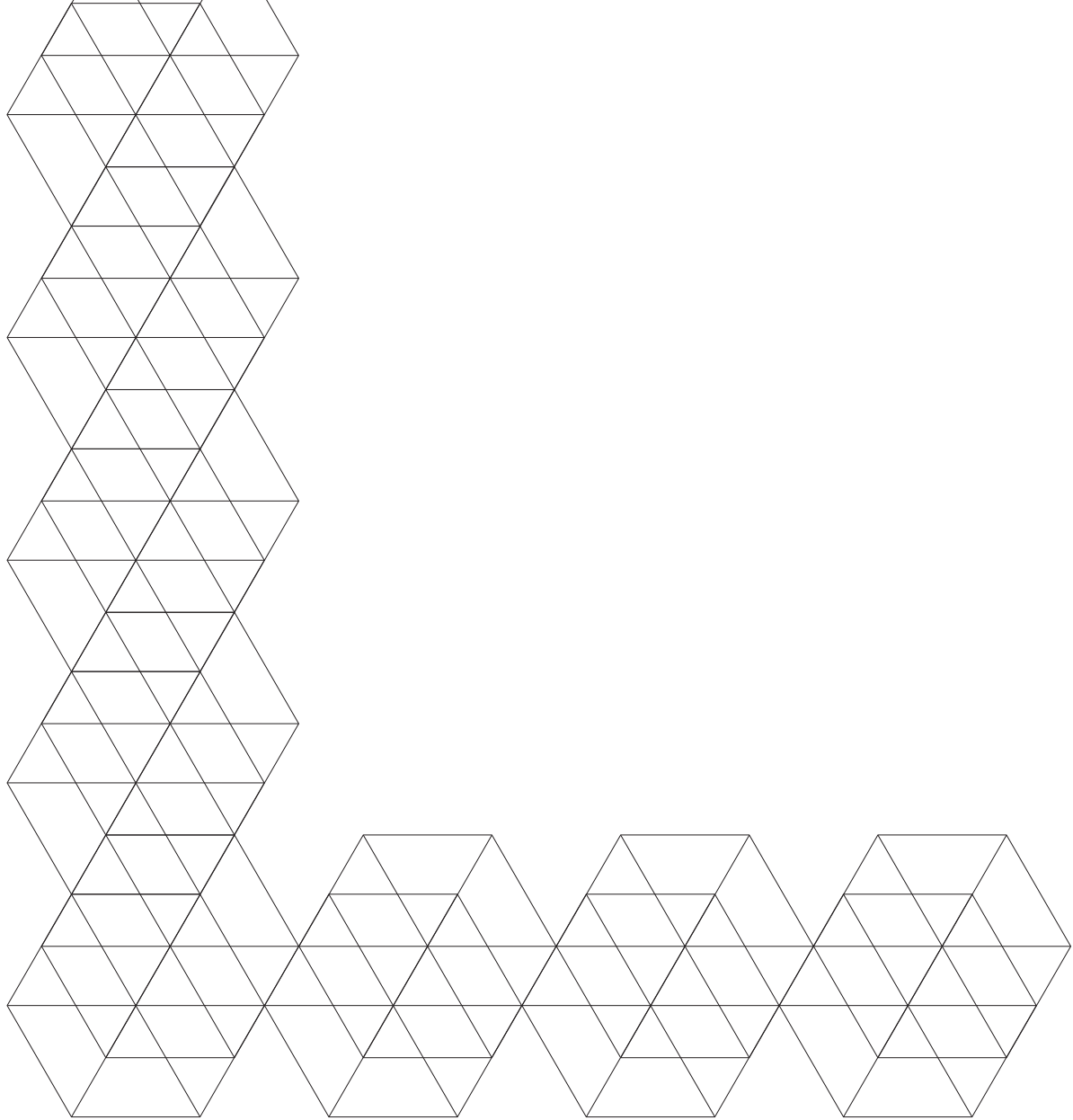
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LIGHTING THE LOWLINE

A radical experiment in daylighting could result in New York's first illuminated underground park.

text by Elizabeth Evitts Dickinson

Five years ago, the economy took a dive and architect James Ramsey went underground. Ramsey is the founder of RAAD Studio, an architecture firm located on Manhattan's Lower East Side. When the financial markets stalled, so did many of his projects. "I suddenly found myself with plenty of free time, and so I started going urban exploring," Ramsey says.

Ramsey knew someone at the New York City Metropolitan Transportation Authority (MTA) who was a subway history buff and that's how, one day in 2008, he found himself 25 feet below Delancey Street, one of New York's busiest thoroughfares, standing inside what was once the Williamsburg Trolley Terminal. Originally opened in 1908 as a depot for streetcars, it was decommissioned in 1948 when the city stopped using the trolleys. The 60,000-square-foot space, owned by the MTA, had been vacant for decades, but the remaining architecture contained the trademarks of solid 20th-century design—muscular steel rivets, cobblestone floors, vaulted ceilings. "It is a stunning, cavernous space," Ramsey says. "Hundreds of thousands of people traverse overhead not knowing what's underground."

Ramsey couldn't shake the idea that there were several city blocks of unused acreage smack in a congested neighborhood desperate not only for public space, but green space. So what if it was underground? Maybe, he thought, you could channel light like a liquid and irrigate the space with enough sunlight to support photosynthesis. Maybe, he thought, you could build New York's first subterranean park.

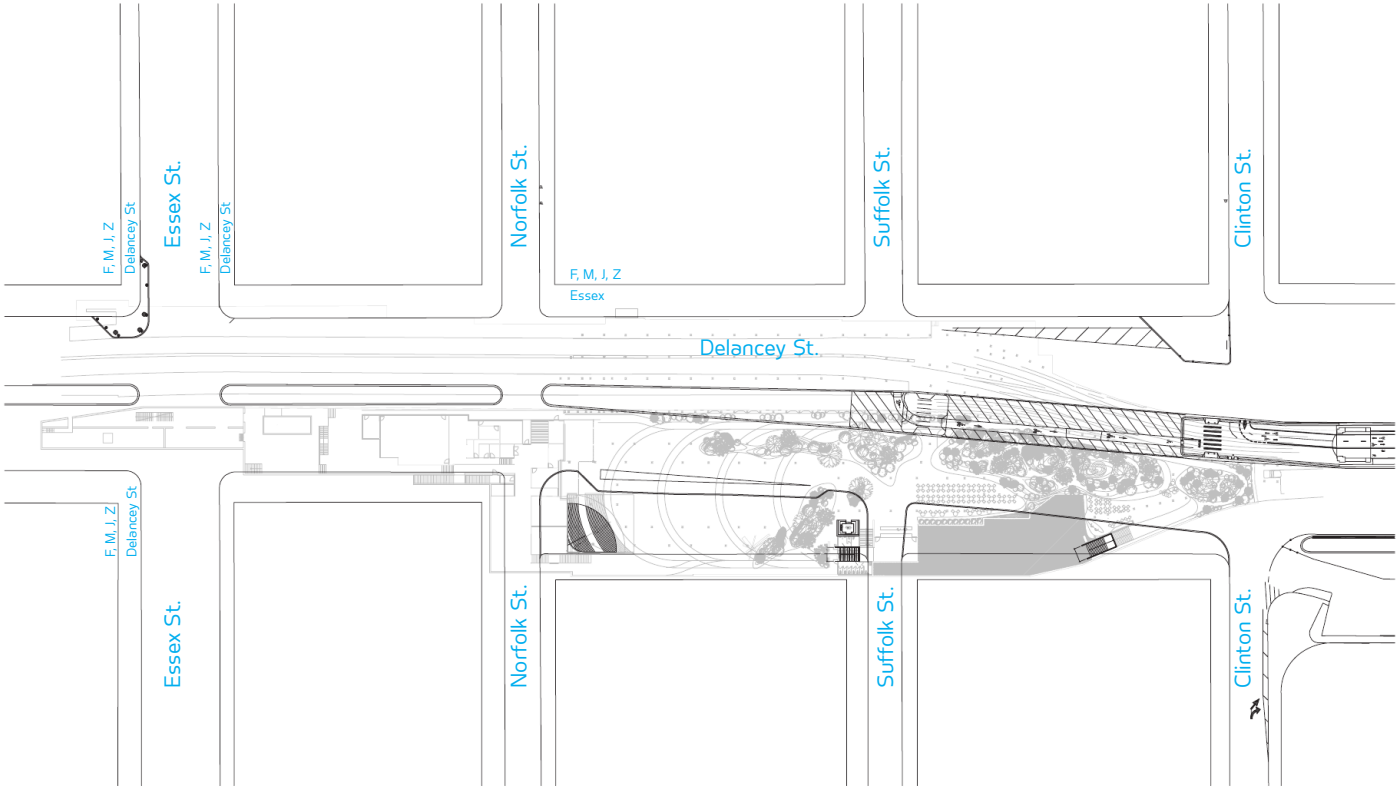
Ramsey began tinkering with a design for a contraption that could collect sunlight above ground, bring it through the street using fiber optic cables, and then redistribute it into the subterranean space using a reflective dome. He partnered with Ed Jacobs, an old friend and industrial designer, to build proof-of-concept models, and then displayed the small prototypes in the window of his architecture studio. "They actually worked," Ramsey says.

Ramsey and a few other designers from RAAD Studio created computer models showcasing the potential underground park design, replete with trees and greenery, walking paths, and undulating expanses for recreation or relaxation. Ramsey dubbed it the Lowline, a nod to the High Line's success in transforming disused urban infrastructure on Manhattan's West Side into a vibrant public amenity. Soon, the concept of the Lowline caught on. "We had these startling designs and the more I showed them to friends, the more encouragement we got to put it forward to the politicians and the community," Ramsey says. Ramsey, joined by community outreach expert Dan Barasch, formed the Lowline nonprofit organization in 2011 to advance the idea.

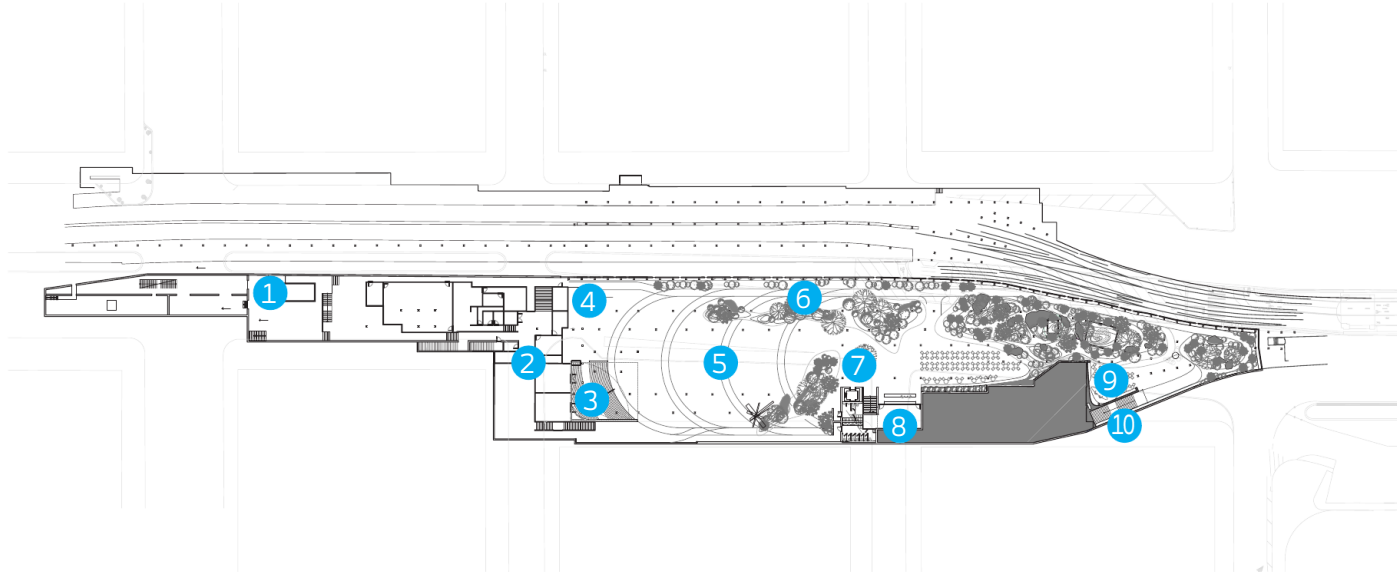
The Williamsburg Bridge Approach at Delancey Street, circa the early 1900s. Once the site of the Williamsburg Trolley Terminal, it is now the location being explored as the possible site of the Lowline.



Street-Level Plan



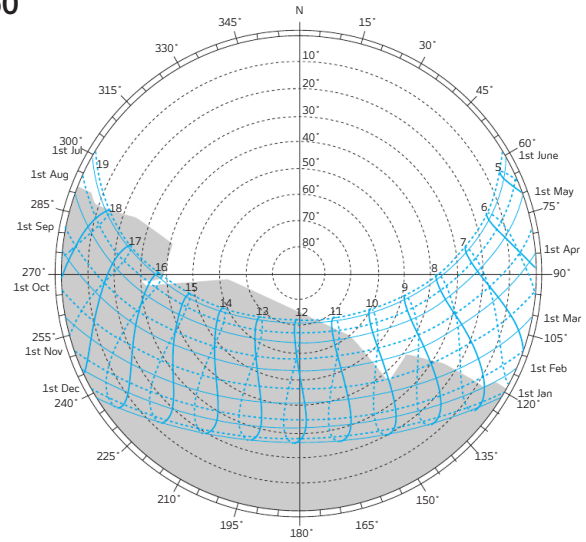
Underground Plan



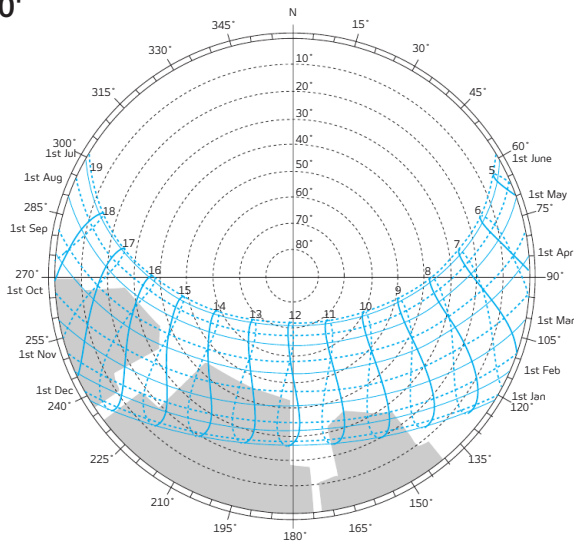
- 1. Server room
- 2. MTA BOH space
- 3. Grand entrance
- 4. Subway access
- 5. Plaza
- 6. Promenade
- 7. Common
- 8. Kitchen
- 9. Café
- 10. Clinton Street entrance

The Lowline, conceived by architect James Ramsey, explores the potential of creating subterranean public space, and in doing so, experiments with different daylighting techniques to bring natural light below grade. To determine how it might be done, Ramsey enlisted the aid of the lighting design team at Arup. Star Davis, lead lighting designer, embarked on an extensive daylighting study and analysis of the area. Overshadowing diagrams (this page) were constructed "to study the shading effect of the neighboring buildings" and determine the solar access at possible daylight-harvesting locations along the site. A full-scale mock-up was built and on display as part of a two-week exhibit in September 2012 (facing page top and bottom).

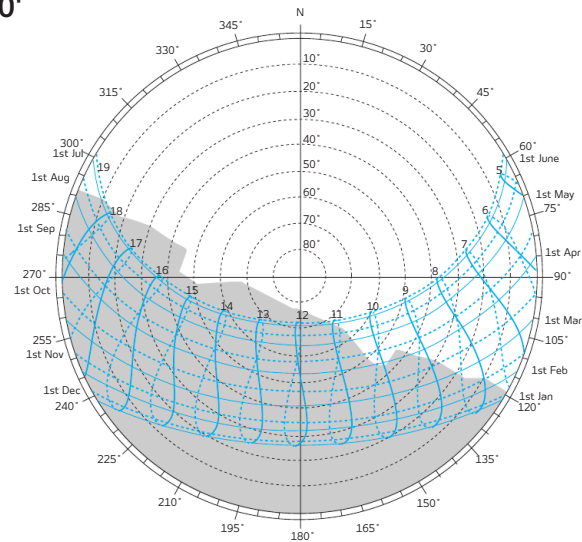
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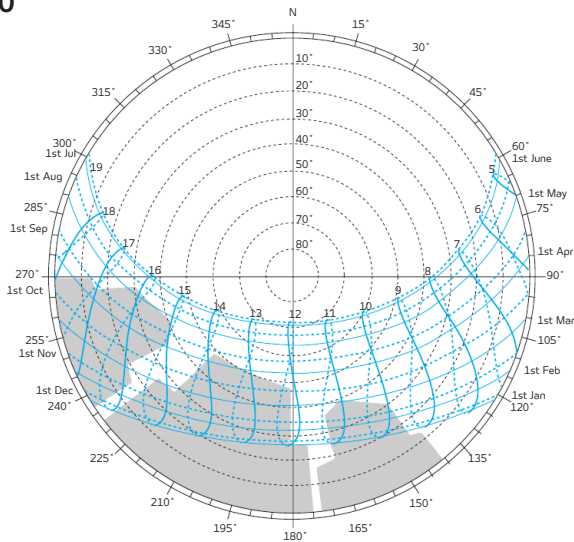
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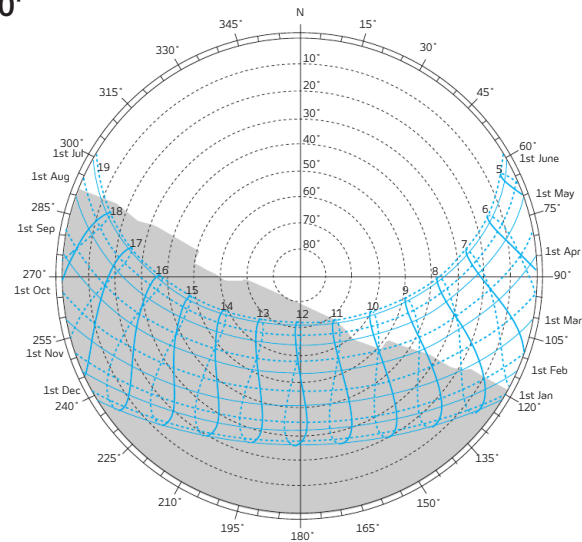
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@ 20'



@ 20'





Top and opening page: Arup; Bottom: Alex Goldmark

But was the daylighting concept truly feasible? To find out, Ramsey partnered with architecture and engineering firm Arup. Star Davis, a lighting designer with Arup's New York office, conducted an extensive daylighting study surrounding the project. "This isn't like any space that currently exists and there's no way that traditional daylighting techniques could be used," Davis says. For one thing, heavy automobile traffic above meant that a large aperture opening to the sky was not possible.

But Davis and Ramsey knew that daylight—not electric light—was the goal. "Natural sunlight has a magnetic pull for people," Davis says. Both favor the quality of crepuscular light, the way sun streams through a tree canopy or a cloud cover at sunset to create resplendent shafts of light. "There is never any confusion that that is daylight," Davis says.

The quality of light diffused inside the Lowline would need to have enough illuminance to support photosynthesis, but not so much that it would blind visitors. "You don't want to create a glare bomb," Davis says.

So Davis began a lengthy study of the luminance ratios of daylight at different hours in the city. She concluded that the "magic hour"—that moment when the sun begins to set and ignites the sky—was the light level that they should aim for. Davis also evaluated the solar exposure at the site using a sun-path diagram, which illustrates the path of the sun over the course of the year and throughout the day. Overshadowing diagrams show the shading effect of neighboring buildings.

Based on the conditions above ground and the desired quality of light below ground, it was determined that a heliostat would be the best solution to harvest direct daylight. A heliostat is a solar tracking mirror that redirects light to a fixed position; it can be fastened above ground to a neighboring building or structure. A computer program that tracks the sun moves the mirror to capture the sun's light throughout the day. The light can then travel to the Lowline using either reflective tubes or fiber optic cables designed specifically for direct solar capture. Davis and Ramsey are still exploring the best options for tunneling the light underground, with the goal of finding a tube or cable that protects the spectral transmission of the light so that it retains its color temperature. Once underground, the light will be diffused via reflective panels designed by Ramsey with the help of engineers.

Details

Project: The Lowline, New York (Under Delancey Street between Essex and Clinton Streets) • **Architect:** RAAD, New York • **Industrial Design Consultant:** Design Necessities Initiative, Brooklyn, N.Y. • **Lighting Design Consultant:** Arup, New York • **Structural, Mechanical, and Electrical Engineering Consultant:** Arup, New York • **Real Estate and Economic Development Consultant:** HR&A, New York • **Proposed Project Size:** 40,000 square feet • **Projected Project Costs:** Confidential

Heliostats are not new to New York. In Lower Manhattan, Battery Park City's Teardrop Park South successfully uses heliostats to brighten shaded spots. But redirecting enough light to a space such as the Lowline is a unique application of this technology. The Lowline and Arup reached out to manufacturers who are pioneering the collection of direct sunlight, such as Sun Central, which makes the SunBeamer, a mechanized solar-tracking device capable of being customized for architectural uses.

Last spring, Ramsey believed it was time to test the lighting design's efficacy, as well as the public's interest in an underground park by building a sample of the Lowline above ground. "A very next natural step was to put on an art installation about the technology," Ramsey says.

The Lowline nonprofit started a campaign on Kickstarter and, in a matter of days, raised more than \$155,000 to build a full-scale mock-up. The exhibit opened in September 2012 in a warehouse on Essex Street, not far from the Lowline site. After blocking out all light, Ramsey and his team used more than 600 anodized-aluminum panels to craft a complex compound curve on the ceiling to serve as a solar canopy. "We found inspiration in space telescope design," he says.

Six heliostatic devices were clustered into an existing skylight. Then, Ramsey says, "we plugged in the sun." The sunlight filtered onto a mossy knoll where a Japanese maple tree and ferns thrived. "We even sprouted [edible] mushrooms," Ramsey says.

Over the course of the two-week-long exhibit, 11,000 individuals stopped by. Some people rolled out blankets and picnicked, others read books, and suddenly a dark warehouse became a social gathering spot. The press also poured in, and the Lowline's story was picked up in magazines and newspapers around the country. Today, the momentum for the project continues as the nonprofit works with city officials to acquire the space. Ramsey is confident that the MTA will move forward and work with them on developing the site.

While the Lowline's principal focus is about bringing light below grade, the equipment needed to do so lies, in part, above grade. To that end, Ramsey and Davis envision that the heliostat skylights would be incorporated into urban furniture that would also double as infrastructure—objects such as sidewalk benches or bike storage. It would also announce the existence of the Lowline to people who are walking or driving by. In many ways, the Lowline challenges not only the traditional understanding of what a daylighting strategy can be, but the extent to which light can be the primary driver in transformational design.


"The Lowline is an opportunity to use light that effects change on a vast urban scale," Ramsey says, which is not a bad outcome from a slow day at the office. •



Through a crowd-funding campaign on Kickstarter, the Lowline nonprofit raised more than \$155,000 to build a full-scale, proof-of-concept model that uses more than 600 anodized-aluminum panels to form the complex compound-curve that functions as a solar canopy.




Alex Goldmark



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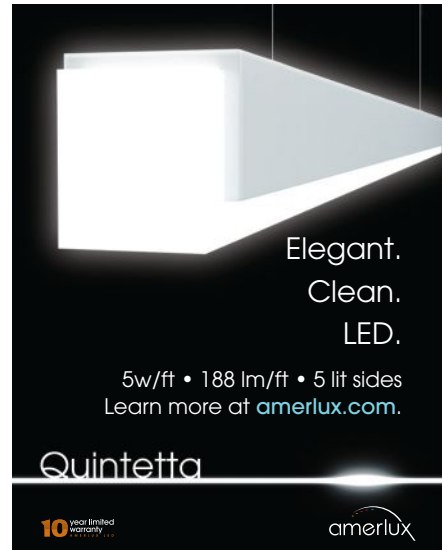


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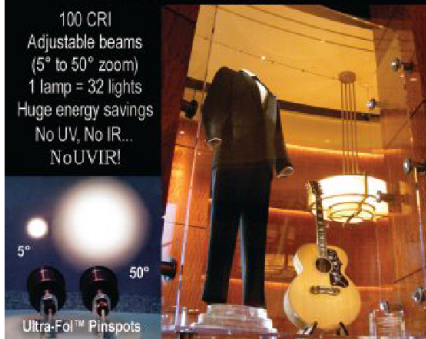
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Mark Major

interview by Elizabeth Donoff

photo by Shaun Bloodworth

“One of the industry’s priorities must be developing the field of lighting education. There are a lot of fantastic, young lighting designers, but there needs to be more who are educated not only with a proper body of theory and technical knowledge, but an understanding of the professional context in which they are working.”

Mark Major didn’t set out to be a lighting designer, or even an architect. “In my heart of hearts I wanted to be a fine artist, a painter,” he admits. Persuaded, however, to take a more “professional” route, he applied himself diligently and pursued architecture—at Brighton and Edinburgh where he completed his degree and diploma, respectively. While in Edinburgh he joined Lighting Design Partnership, the firm founded by André Tammes and Jonathan Speirs. That part-time job would prove significant, laying the foundation for his collaborative partnership with Speirs that would eventually mature into the internationally recognized practice Speirs + Major. The creative opportunity of working across disciplines has remained essential to Major’s design perspective, and he remains an artist at heart, only now his medium is light.

What fascinates you about light?

It’s the unexplored territory. You could take any one word in lighting—reflection, for example—and spend a lifetime just studying that concept.

Do you view lighting and architecture as distinct disciplines?

Divisions are a tricky thing. I’m proud of the fact that I trained as an architect, that I *am* an architect. Having said that, I have always valued the broader dimension of design.

How has painting impacted your thinking about light and lighting?

Painting is all about light. You can learn a huge amount by looking at the way that light reveals a subject and the way in which paint controls, absorbs, or reflects light.

What is the biggest misconception about lighting design?

That lighting design is exclusively a technical subject. Clients and architects will come wanting a specification service as opposed to seeing lighting as a distinct area of design that can make a significant contribution to a project.

How has technology impacted lighting?

It has completely changed the way we communicate our ideas. On the technical side, knowledge used to be based on understanding when you used a certain type of light source. Now with LEDs you’re dealing with a single source that has a lot of complexity and diversity in its own technology.

What advice would you offer a young lighting designer?

Observe the world around you—the way light falls on a material, the way it casts a shadow. It’s about learning to read the visual environment.

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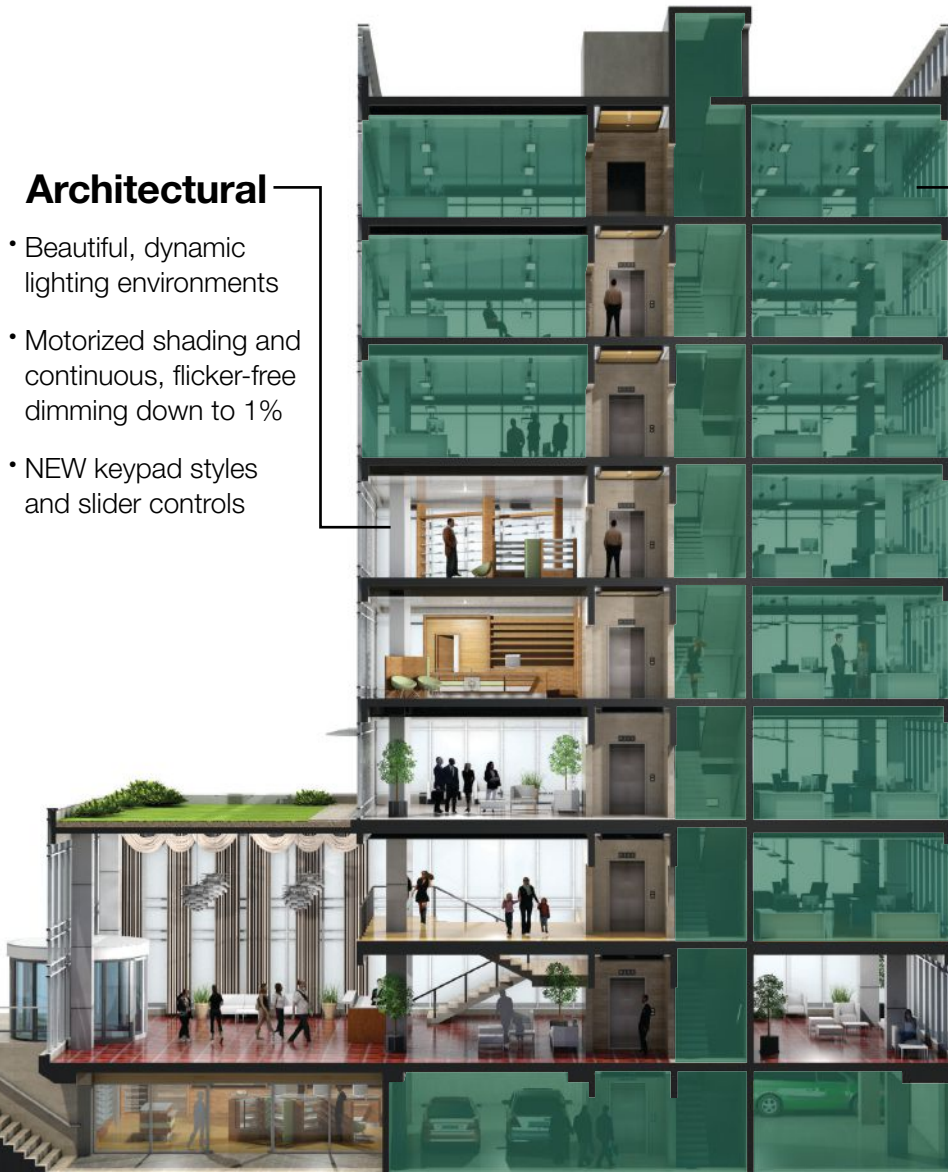
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