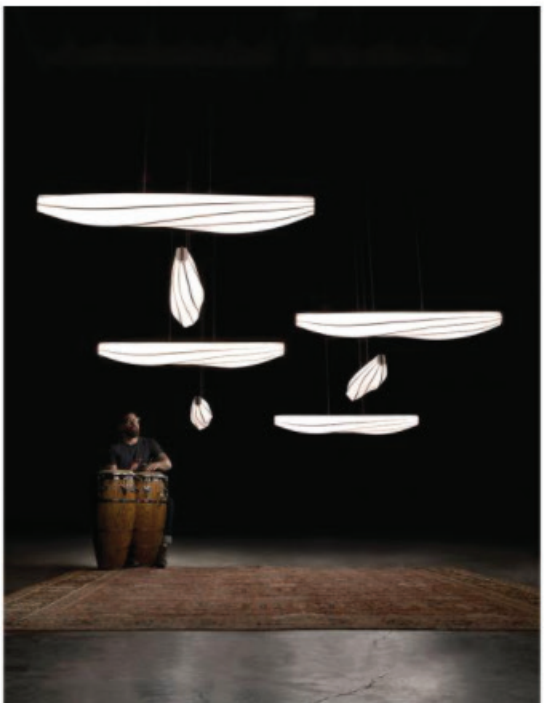
Your Business

Fixating on Fixtures: The process and thought behind beauty and light



The aesthetics of a statement piece must also balance a fixture's functionality as a light. The pendants pictured are Cerno's Lenis. Photo courtesy of Cerno.

By Jeff Gavin | *Published On Dec 15, 2021*

The right lighting fixture can make a statement, set a style or be a signature in an office lobby, hotel bar or hospital reception area. However, "wired and done" takes more than good looks. It involves getting power, color rendition and dimmability right so fixture performance contributes to a space's feel. Working with a lighting designer, electrical engineer and others can help, but don't forget the fixture manufacturer, because that added partnership can be invaluable.

Fixture design and alignment with a space's lighting takes care and collaboration. For fixture artisans and distributors, the more they know the requirements of a project, the better the lighting fixture can match the needs of the electrical contractor and others.

Rick Meyer, president of SPI Lighting, an architectural lighting designer and manufacturer in Mequon, Wis., has found lighting the commercial space and the commissioning process increasingly complicated. Beyond higher-end commercial projects, other projects such as office spaces, healthcare and educational centers now undergo this rigor. Hospitality-style fixtures are also making their way into all these markets and are being tasked with doing more. Integrated design where the architects and contractors work together is something that is helping companies such as Meyer's deliver a successful fixture.

Color-changing Novato Rings by SPI Lighting installed at a coworking space in Burlington, Vt., designed by SAS Architects

Photo courtesy of Ryan Bent Photography.

Making sure fixtures get it done

"There is always the question of what does the fixture need to do," Meyer said. "The architect is trying to ensure the aesthetics meet the vision of the space. The lighting designer might be looking at designing layers of light and managing the visual experience within a space. Their need is greater today with ever-growing complexity of control and technology compatibility, along with the increased options of CRI, R values, CCT choices and in many cases the understanding of nuances within these choices such as LED binning [sorting LEDs so they have similar output]."

Fixture incompatibility with a control system or conflict with the light rendition of other fixtures is something the fixture manufacturer, the lighting designer, the EC and others on the team can catch during the specification stage of a project.

"Electrical engineers zero in on loads, energy consumption, power backup," Meyer said. "They might make sure the circuitry is adequate for the present and/or future power needs. The electrical contractor might be involved with some of this as well, but certainly the installation of wiring, cable and overall power. The EC must understand all of the goals from the design team, plus all of the installation details to make it all work."

Beauty and function

Finding LEDs that work for a fixture and the overall lighting objectives requires homework.

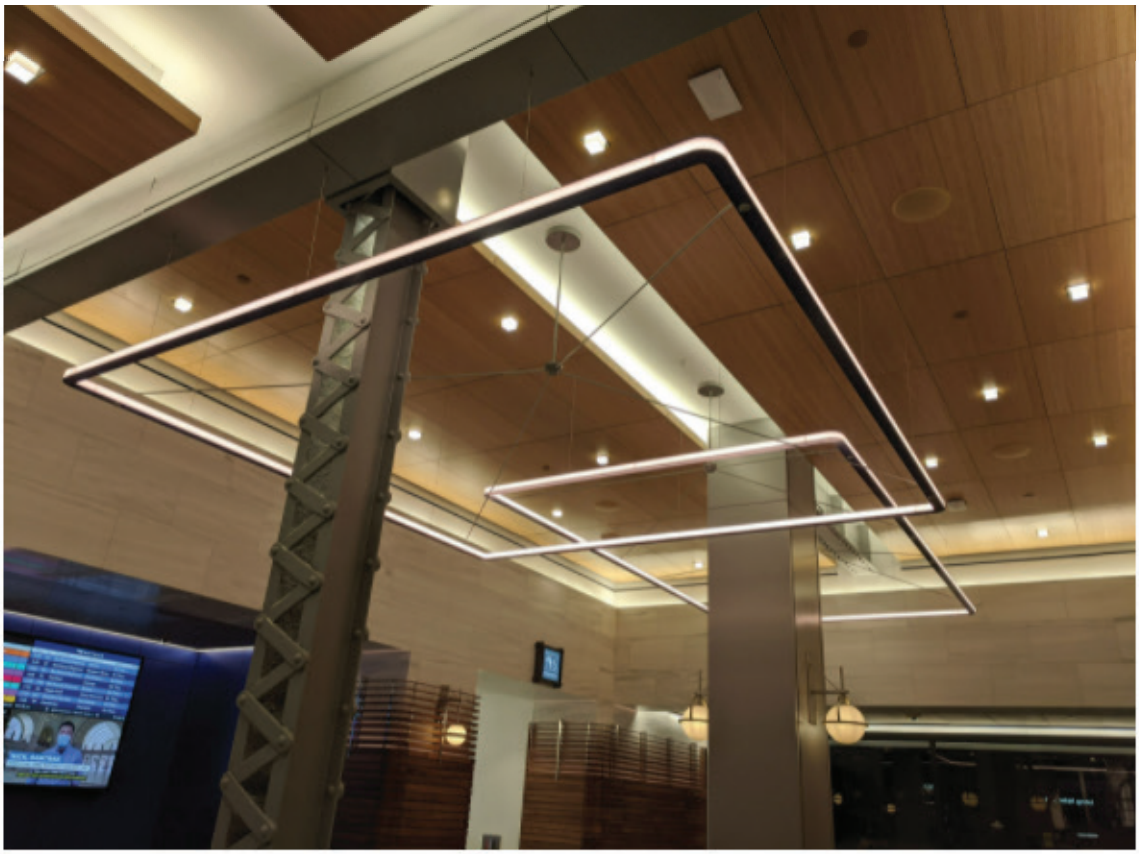
"Selecting the right LEDs that meet color rendition specs, dimming needs that might require lights to dim down to 1% illumination, all pose challenges," Meyer said. "We are seeing a rise for RGBW (color-changing fixtures). I am seeing more deployment of dynamic lighting that can shift for circadian rhythm, or for 'archetainment' purposes to service architectural elements of the space, such as adding drama with light. Some of this might involve statement lighting fixtures that pose their own challenges. The more complex the projects, especially when aesthetics are a factor, the more choices. There could be more variables involving color temperature, light levels and control settings. More attention might need to be applied to color changes, color tuning and so forth."

It can make one's head hurt when coordinating different lighting levels from overhead chandeliers to decorative sconces, table lighting and so forth. Each requires technical coordination with an eye to design that fits the desired mood of the space. You also want to ensure the LED enhances the color and form of a statement piece and other fixtures.

"A reputable, professional luminaire manufacturer will publish not only the fixture details such as dimensions, finish choices and aesthetics, but will also publish all of the technical performance data," Meyer said.

Brooklyn, N.Y.- based Roll & Hill bills itself as a "design-minded furniture and lighting company." The firm collaborates with noted domestic and international designers to create a collection of distinctive lighting fixtures manufactured in the United States.

"There is a lot of back-and-forth between all parties when we do custom pieces or large installations," said Jason Miller, Roll & Hill's founder and CEO. "Moynihan [Train Hall] in New York City comes to mind. We collaborated with the architects, lighting designers, engineers, a purchasing company, electrical contractor, general contractor and management from the rendering/CAD stage through final installation [custom and standard made-to-order fixtures]."



Contractors installed a custom version of Roll & Hill's Halo light fixture above the waiting area of the Moynihan Train Hall in Penn Station.

Photo courtesy of Roll & Hill

Opened in January 2021, Moynihan Train Hall is an expansion of Penn Station, the main intercity and commuter rail station in the city.

Miller noted the advances in LEDs have driven their adoption in big projects.

"There are many very good quality LEDs on the market now," Miller said. "They can now emanate a much more natural-looking light from fixtures and large statement pieces. Dimming and controls are our biggest technical hurdles these days. There are many different systems, drivers and LEDs. All must be synced to work correctly. We spend a lot of time making sure a light will work properly in whatever scenario it is installed. We deal with many of the same issues when working on residential projects, as well."

For high-end residential, and a smaller team, homeowners may turn to the EC for advice with expensive lighting and a more complicated lighting design.

Bret Englander, co-founder and director of sales and marketing for Cerno Group, a decorative, architectural and custom lighting designer and manufacturer based in Aliso Viejo, Calif., agrees driver compatibility can at times be challenging.

"We design using universal drivers as often as we can," Englander said. "Most of our hotel projects share a standard. You want fixtures that are compatible with the control systems specified on a project."

About LEDs, he said "We've all become better managers of this light source. We can diffuse the light better when necessary. Better direct it, bounce it off a wall or ceiling. Reduce glare."

Englander shared that his firm's name, Cerno, means "to resolve" in Latin. That sets a high bar for his business partners and himself. While they have designed statement pieces that became very sculptural, they also recognize aesthetics cannot get in the way of a fixture's functionality as a light.

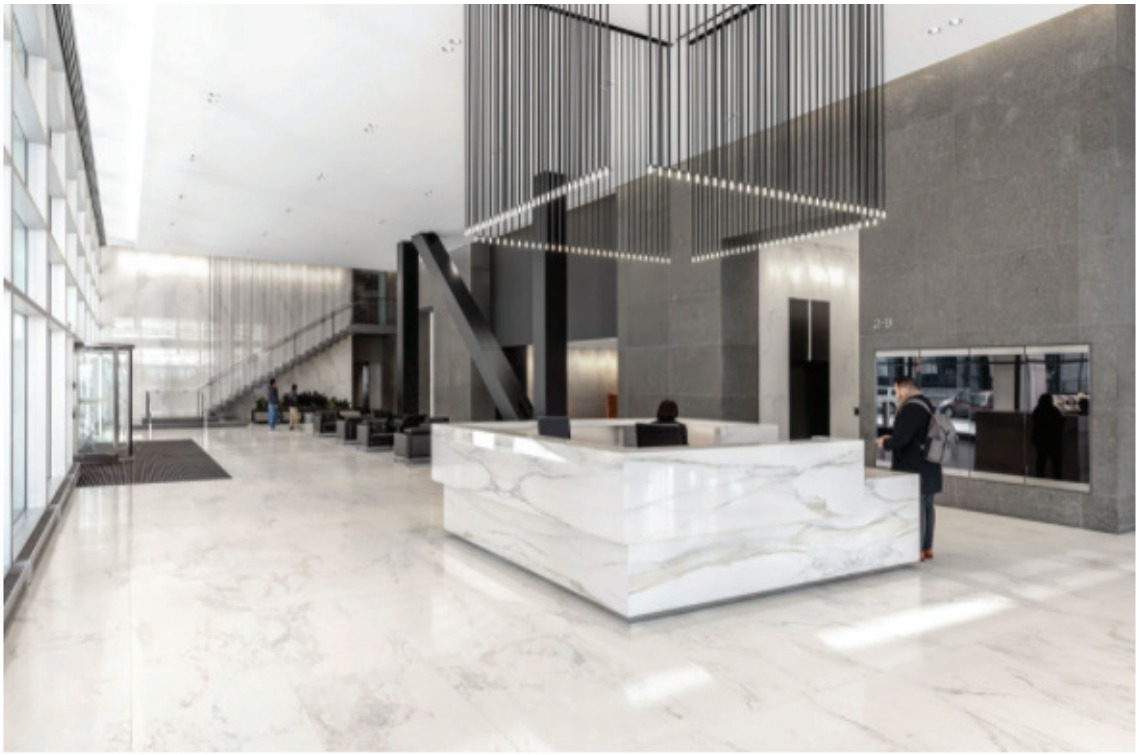
"The better we know how a fixture is being used, installed, its performance specs, the better the fixture," Englander said. "Many of our product generation improvements and overall product development have been informed by the discussions we and our reps have had with lighting designers, electrical engineers and the like. We value their input. Fixtures simply cannot be designed in a vacuum".

His firm also consults with electricians, and he wants Cerno to be a resource.

"We, too, consider how the fixture is installed, consider beam spread, lumens and so forth," Englander said. "The fixture manufacturer isn't always thought of as a resource, and they should be. Our job is to listen well and produce a solution. We enjoy that conversation."

Helping bring ideas to life

ILEX Custom Metalcraft, a fixture manufacturer and subsidiary of Norwell Lighting based in East Taunton, Mass., also favors LEDs in its fixture designs. Its large-scale, modern take on a chandelier epitomizes the art of collaboration between a fixtures manufacturer and a project design team. Robert Mongiardini, ILEX national sales manager, said the fixture suspended in the lobby of AEW Capital Management L.P. in Chicago successfully provides light and meets the space aesthetic.



This custom, suspended LED fixture was designed by TPG Architecture and manufactured by ILEX Custom Metalcraft, with input from contractors. It's in the lobby of AEW Capital Management in Chicago.

Photo courtesy of TPG Architecture and ILEX Custom

"TPG Architecture out of New York originated the idea for the suspended LED chandelier," Mongiardini said. "We brought their idea to life beginning with sketches, CAD rendering and eventually an on-site mockup."

The chandelier is a series of LED suspended lighting pipes that form a square.

"We mocked up four of the lighting pipes and sent them out to AEW," Mongiardini said. "The contractor got involved to see how this lighting fixture would work, came back with questions, and asked if we could make some changes. To secure the suspended light bars to form a stable square formation, our company's engineer fabricated a guide or bar along the bottom of pipes to maintain the square configuration."

Blending in

Getting color temperature and color rendering correct are important in a space that combines general lighting with any number of decorative fixtures (sconces, overhead), including table lighting.

Mongiardini said most larger-scale projects have lighting designers who want to maintain a constant color temperature.

"Our mid-point is 3,000K for our fixtures" he said. "A hospital or education space may need light up to 3,500 or 4,000K. We will customize our fixtures for larger projects, which means changing the LED components beyond 3,000K. We do lamp imaging and mock-ups to make sure the lamp doesn't run too hot in the fixture, isn't too close to a diffuser and, if multiple lighting fixtures (e.g., pendants) are hung, they are properly spaced to avoid heat buildup."

On a current project in Jersey City, N.J., Mongiardini is working directly with an electrical contractor.

"The contract specified 450 of a custom sconce that we designed. We changed a back plate for easier install based on the contractor's request," he said. "We also shipped based on their direction. You do not always get to have these conversations. It's been great."

Working on a project where lighting and fixtures make a statement requires understanding of design goals, execution and installation. You may or may not have the advantage of working with a full design team. The fixture designer or supplier is a resource—just ask.

About the Author

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