

case study | Sivoia QED® and EcoSystem®

AIA Headquarters, San Francisco



The Challenge: Upgrade the historic multi-functional meeting facility with dynamic, energy-efficient lighting and solar shading.

The San Francisco headquarters of the American Institute of Architects (AIA) has been located in the city's venerable Hallidie Building since the mid-1990s. When the AIA decided the time had come to upgrade the existing facility to a sustainable, globally conscious standard, the team looked to Lutron Electronics Co., Inc., of Coopersburg, Pennsylvania, for energy-efficient lighting and shading solutions. Lutron® delivered with EcoSystem™ lighting control and a Sivoia QED® shading system, bringing the nearly 100-year-old building to the leading edge, once again.

Hallidie is perfect as headquarters for the AIA. Designed by Willis Polk and named for the inventor of the city's iconic cable car system, the eight-story framed structure is listed on the National Register of Historic Places, in part for boasting the first glass curtain wall in North America. Today, the building is a candidate for silver-level LEED certification.

Within the building, the new AIA office space is visited by hundreds of design professionals every month, and serves as a showcase for products that contribute to sustainable design. Any redesign of the space would get attention—particularly one that drew heavily from energy-saving technology. The proposed solution would have to be aesthetically appropriate to the minimalist approach of the AIA headquarters, satisfy stringent California energy usage standards like Title 24, and remain sensitive to historic preservation requirements.



Lighting designer Janet Nolan of J S Nolan + Associates Lighting Design was the creative mind behind the sophisticated, yet easy-to-use and responsive lighting solution.

“Our goal was to design a light system that used fifteen percent less energy than the already very restrictive California Title 24 code,” Nolan says. “All of the lighting is driven by the daylight influence. There is an abundance of daylight in areas adjacent to windows, permitting high efficacy [fluorescent lighting] to automatically dim down in response [to light level changes in the space]— maintaining 100% of the required light as a combined sum of electric and natural influence.” In addition to the dimmable light system, smart window shades— called Sivoia QED® (Quiet Electronic Drive)— would control the dynamic daylight in the space.

Lutron® light controls combined with automated shades can contribute up to 20 points in four out of five LEED-CI (Corporate Interiors) categories.

“Lutron created this highly efficient system that responds to the movement of the sun, automatically dropping shades based on time of day and day of week,” says Margie O’Driscoll, the office’s executive director. “A real unforeseen benefit of the system is that we can override it, but we rarely do. The light always seems to be just right. Plus, we’re a small staff with over 50 programs and meetings per month. It makes a meaningful difference that the system functions for the most part on its own. And, for example, when it is time to transform the gallery into a lecture space

we are able to quickly change the lights at a touch of a button. Light levels, shades and projection screens respond in unison to our pre-determined preferences. It’s like magic.”

Nolan adds that it also has to function as an office. “The lights need to be responsive to human factors like managing glare, individual ergonomic adjustments, and occupant preferences.”

Each individual fixture can respond independently, maintaining light uniformity throughout the space and delivering significant energy savings. The fluorescent EcoSystem™ network also utilizes Lutron Hi-lume® 1% dimming ballasts for flicker-free 99% to 1% dimming—in this installation of T4 compact fluorescent lamps. The ballasts start lamps at any pre-set dimming level (no flashing to full first), and provide smooth, continuous full-range dimming without flicker or jumps in light level. The ballasts also feature patented technology that keeps light levels even, regardless of building electricity quality. Each zone can be programmed, allowing for maximum flexibility of over-all light system.

Christ Surunis, Senior Account Supervisor for Lutron, says, “What we wanted to do with the Hallidie Building was save energy through automated control without compromising occupant comfort and experience. Engraved faceplates for the various control stations make it easy for visitors to understand the purpose of each keypad and easily modify light levels. Each one has clearly defined ‘scene’ buttons, such as exhibit, meeting, event, and presentation.”



The most eye-catching part of the system is the Sivoia QED® shading system. Sivoia QED window treatments raise and lower in virtually complete silence. They move in unison, aligning to within 1/8 of an inch, and do not disrupt workers, meetings, or presentations—enhancing the experience for all.

To reduce glare and protect interiors from UV damage, the shades feature a PVC-free basketweave. That, in turn, sustains the long term aesthetics and usefulness of furnishings and surfacing materials. The shades also help reduce solar heat build-up in the summer and provide insulation in the winter, protecting fabrics and furnishings and keeping the people in the space comfortable. If there is too much daylight coming through the window, the shading system can operate either automatically or respond to a manual push-button control from a variety of locations.

“We are pushing to use the Sivoia QED more and more,” says Nolan. “With solar fabrics, the optimal amount of light transmits into the space. Lutron® was great. We worked closely with the local rep, ALR [Associated Lighting Representatives], and a Lutron field service engineer has consistently been available to assist with commissioning, fine-tuning and periodic re-programming.”

“At Lutron, we recognize the importance of cooperating with others to ensure appropriate outcomes and lasting results,” said Surunis.

In this application, as a leader in light control, Lutron collaborated with a recognized name in high performance light fixtures, Zumtobel, to deliver a responsive and reliable solution. The components all were pre-assembled and tested at the factory for the benefit and satisfaction of architect, lighting designer, building owner, and occupants.

In its blending of modern technology, historical architecture, and aesthetic sensibility, the lighting design for the San Francisco AIA chapter is a testament that old can indeed be made new again.

Client:

American Institute of Architects (AIA)
San Francisco, CA

Architect of Record:

Fred Quezada, FAIA | Quezada Architecture
Sausalito, CA

Lighting designer:

Janet Nolan
J. S. Nolan + Associates Lighting Design

Electrical engineer:

Stantec Engineers | Sacramento, CA

Light Control Solutions:

Associated Lighting Representatives | ALR
Oakland, CA

Electrical contractor:

ASF Electric
San Francisco, CA

Window Systems Provider [WSP]:

Specialty Finishes + Applications
San Rafael, CA

Equipment provider:

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