

ACEEE American Council for an Energy-Efficient Economy

Maximize Energy Efficiency:
Use less power, light better,
do it affordably.



Since 1980, the American Council for an Energy-Efficient Economy (ACEEE) has come to be recognized as a leader for offering outstanding analysis and expertise in promoting energy-efficient best practices in lighting.

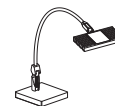
So when they decided to relocate to the National Press Building in Washington, D.C., it was a welcome opportunity to use their knowledge in their own facility.

According to Executive Director, Steve Nadel, "Our staff has been providing clients design suggestions for years, this relocation provided us with an opportunity to practice what we preach."

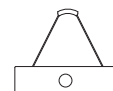
The former offices, a short distance away, were somewhat energy-efficient but had some lighting issues: some areas were dark while others overlit. Moving to the new space, they were looking for better quality lighting with softer, even distribution, maximum use of daylight, and with less glare. At the onset of the project Steve Nadel defined the goal in these words, "to maximize efficiency, minimize energy and achieve high-quality lighting in the space – and don't forget we're a non-profit so it has to be affordable because we're on a tight budget."

The lighting was the most successful part of the project because it modeled an affordable way for any organization to be energy-efficient using high-performance lighting.

PROJECT SNAPSHOT



3-watt & 6-watt
PLS Desk Lamp



Series 16,
1 lamp T8

**Overall Lighting Power
Density: 0.65 w/ft²**

“One-lamp high performance T8 Series 16 created a more flexible design.”

- Steve Nadel, ACEEE Executive Director



The design started with the task lighting, it was not an afterthought. For the 8,670 sq.ft. office area the design team used the Finelite LED Personal Lighting System 3-watt and 6-watt desk lamps and undercabinet task lights. This allowed them to also reduce the number of ambient light fixtures while greatly reducing the amount of energy needed to light the office.

Working with the team at Finelite, designers modeled the lighting in all of the areas so that they knew exactly what they had in terms of light distribution in the design. The lighting system included Finelite Series 16 pendant fixtures using high performance T8 lamps. The high performance T8's allowed more flexibility because the ballasts could be fine-tuned. Finelite ran calculations at the standard distribution in all the areas to start and, depending on the results for each room, then added or subtracted some light using different ballast factors. For the most part one-lamp fixtures were all that was needed, with the exception of a couple of areas where two-lamp fixtures were used.

Wall-mounted Series 16 was used in the conference room, adding vertical lighting to the space. Overall, ACEEE accomplished what they set out to do proving their advice that energy efficiency is the most cost-effective way to reduce energy consumption.

A team of individuals who shared ACEEE's vision led the build-out of the new space. Kaan Dilber, Project Architect, had this to say about the project:

“The ACEEE design was very important to us; we believed in their mission and we wanted to help.

“We started with just girders and bare cement in a 1920's building that had lots of support beams. I had a certain vision for the space and I wanted an aesthetic that was sleek, contemporary and modern. Basically I wanted all of the features...just consuming less energy. We designed the space using sidelights along the periphery and a beautiful

row of clerestory windows to optimize the daylight. The private offices use almost all daylight during the day and the space is designed so that the light flows through to the open areas. The lighting needed to be high efficiency, providing 30 footcandles on the work plane while consuming minimum wattage.

“One of the major challenges we faced was the low ceiling height in areas where I wanted to use high-quality indirect lighting. I was concerned about not having enough light. We ended up using the Series 16 and were able to get the lighting distribution and the energy reduction that we needed.

“In the end, we created a modern and sleek design and we achieved a 35 percent energy savings below ASHRAE 90.1-2004 at 0.65 watts per square foot. The lighting is a much better quality and the staff at the ACEEE will be the first to tell you that the improvement in the lighting has made a big difference in their work and comfort.”



PROJECT DETAILS

Location:
Washington D.C.

ACEEE Executive Director:
Steve Nadel

Architect:
OTJ Architects
Kaan K. Dilber, IIDA, LEED AP
Project Architect

Project Manager:
K&G Project Management
Selva Gunenc
Owner

Electrical Designer:
GHT Limited
Aubrey B. Johnson
Electrical Engineer