

SUDDEN IMPACT. In its relatively short life, solid-state lighting's greatest influence has undeniably been on exterior lighting, whether it's been the proliferation of functional street lighting, dynamic façades, or reinvented streetscapes bringing people back to urban cores.

ARCHITECTURAL SSL

AT THE FRONT

Public-private initiatives are putting lighting at the center of various plans to reinvent urban environments in need of a boost.

SSL BUZZ

A new whitepaper studying the effects of flicker and LED products has found a need for better drivers; Printing 3D LED luminaires.

SSL PROJECTS

China's Hanjie Wanda Square shopping center features an out-of-this-world LED façade that certainly makes a statement.

NUMBER 32 • MAY 2014 www.architecturalsssl.com

THE DARK SIDE OF

BLUE LIGHT

Prudence Required. White LED light has brought large benefits: greater efficiency and better contained site lighting, for example. But some of the reported negative effects of its sometimes heavy blue aspect raise valid concerns. The good news is these issues can be addressed with careful design and selection. [Page 12]

- 09 **SSL Buzz:** Hospital room comforts patients using LED.
- 35 **SSL Profile:** London's historic Reform Club renovates.
- 38 **White Pages:** Exploring app-based wireless controls.

COURTHOUSE RULES IN FAVOR OF LED ON THE GROUNDS OF BETTER MAINTENANCE

Santucci Justice Center Courthouse,
Roseville, Calif.

The South Placer County Santucci Justice Center, part of the Superior Court of California, is one of the most technically advanced, cutting-edge justice centers, especially in terms of architectural design.

Located in the Sierra Nevada range, Placer County stretches from Sacramento to Lake Tahoe. At the time of the courthouse's construction, the region was one of the fastest-growing areas in the state. In fact, the population of Placer County grew by more than 25,000 people in only four years. To meet the increasing demand for court services, Placer County commissioned Sacramento-based architectural firm Dreyfuss & Blackford to design the courthouse, as well as the master plan for a new government center on a 100-acre site in Roseville. The project officially opened in July 2008.

The center itself is a light-filled structure that was sited to make the most of the dramatic views of wetlands to the south. Dreyfuss & Blackford paired site-cast concrete with storefront, Reynobond ACM panels and polished India Black stone veneer. A canopy fabricated in Silver Reynobond ACM and bracketed in polished black stone denotes the entry on the northern elevation, the front and public entry side of the building. The lobby is remarkably transparent, with full-height glazing and skylights bathing the area in natural sunlight.

In just a few short years of operation, the county decided to update the lighting in the facility—specifically, to update it with LED. That said, it was important to the client to maintain the clean, modern aesthetic and feel originally envisioned and delivered by Dreyfuss & Blackford.

According to Edward V. Mazyck, Jr., principal of TMG Energi Solutions, Inc.—the ESCO on the project—LED appealed to them and the county because it provided a means for a longer



ABOVE: The operators of the Santucci Justice Center in Roseville, Calif., liked the look and feel of its lighting scheme a lot. What they did not like was the high energy consumption and disruptive maintenance efforts required to replace burnt-out fixtures. The solution? An LED retrofit that was able to take advantage of existing fixture housings.

Images: TerraLUX

THE CHALLENGE:

Retrofit the original lighting design of the courthouse, including much of its daylighted atrium, with a more energy efficient illumination solution that, more importantly, reduced the need for disruptive maintenance—an issue in a security-sensitive facility.

THE SOLUTION:

The courthouse operators engaged energy solutions provider TMG to retrofit the center with LED. The consultant was able to deliver the goods by creating a custom retrofit kit that allowed the team to place more efficient LED light sources in existing fixture housings.

PROJECT CREDITS:

Client: South Placer County Santucci Justice Center
Lighting Design: TMG Energi Solutions

PRODUCTS:

TerraLUX: MR16B LED Engine; MR16B LED spot engines; DLR7H downlights.



THUMBS UP

△ As sections of the retrofit were completed each night, courthouse personnel were asked what they thought of the new lighting—responses were highly favorable.



operating life, which theoretically would allow the county to dramatically lower maintenance costs by increasing the intervals between lamp replacements, compared to the existing system. Another factor, according to Mazyck, is that LED solved a bigger problem for the courthouse: it would allow the retrofit team to modify the existing fixtures in place, rather than having to perform major renovations.

In researching LED solutions that would complement the existing architectural design and aesthetics, TMG found the right match in a line of TerraLUX LED retrofit products. Specifically, they chose the company's 6-in., 5000K LED Linear Engine for exterior recessed downlights; for the interior, TMG opted for the TerraLUX MR16B LED Engine and its DLR7H downlight.

"We fabricated custom retrofit kits that allowed us to use the existing fixture housing and trim," says Mazyck.

In total, more than 500 LED sources were installed in downlight fixtures throughout the courthouse's lobby, stairwells and common areas. In addition to preserving the beauty of the architectural design, TMG was able to reduce lighting wattage by 62%.

On the justice center's exterior, lamp and ballast maintenance cycles were also truncated when TMG illuminated the front walkway with TerraLUX MR16B LED spot engines. Now the lights come on at dusk and turn off at dawn, and—more importantly to the center's operators—regular scissor-lift replacement is a thing of the past.

The end result is a more energy-efficient, lower maintenance building that preserves the original architectural design and aesthetics.

"It will provide our clients with a solution that will last for many years to come," says Mazyck. ■



ADJUSTING ON THE FLY

△ TMG was able to fabricate custom retrofit kits that allowed the energy consultant to adapt the 6-in. TerraLUX 5000K LED Linear engines to existing fixture housings as demonstrated above. TMG was able to reduce lighting wattage by 62%.