

Infrastructure Change to Reap the Solid-State Lighting Dream

What if building architecture and lighting could be seamlessly integrated to create illumination that is dynamic, personal and flexible? What would it look like?

Over the past 100 years, traditional lighting has acted as an add-on to spaces. Luminaires hang from ceilings, sit on floors, and rest on tables. Solid-state lighting, however, offers new ways to think about how we light our spaces. This rapidly evolving technology is capable of melding with any type of architecture, due to its small size, ruggedness, and long life. Its numerous color options and acceptance of dynamic control can create a personal lighting experience to meet any task or ambience. Yet to be truly flexible, the architecture itself must become as dynamic as the lighting it holds.

Toward an infrastructure change

The LRC and the Alliance for Solid-State Illumination Systems and Technologies (ASSIST) are working to develop a flexible interior infrastructure that will integrate solid-state lighting with other building materials and systems. Such an infrastructure would allow for rapid reconfigurations of built-in lighting, making it as easy to redesign lighting as it is to move furniture.

Communicating the concept

The LRC has designed a full-scale vignette to communicate the concept of lighting-infrastructure change and to demonstrate its value in easily changing lighting design. The ceiling and walls consist of LED-lighted tiles providing different lighting distributions, including general, task, accent and decorative. The tiles snap in and out of a modular electrical grid simply and rapidly to cater to changing room layouts or tasks. For example, accent lighting built into a tile can move as easily as the artwork it highlights—without the need to cut new holes for luminaires and patch drywall.



Future work

The LRC and ASSIST are seeking participation from public and private sectors in the form of project development, collaboration and sponsorship.

2005 Sponsors

Alliance for Solid-State Illumination Systems and Technologies (ASSIST): Boeing, GELcore, New York State Energy Research and Development Authority, Nichia, OSRAM SYLVANIA, Philips, and U.S. Environmental Protection Agency

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