



A registered architect in the State of Washington, Christopher Meek serves as the primary daylighting consultant at the Integrated Design Lab in Seattle where he consults with regional and national design teams and on more than 50 commercial and institutional building projects each year. Meek teaches graduate and undergraduate level courses at the University of Washington on daylighting, electric lighting, perception, and building design and is a frequent speaker on daylighting design and building planning for organizations that include IESNA, AIA, and the USGBC. Meek is a contributing author to the daylighting chapter of ALG Online and a developer of Advanced Building's Daylighting Pattern Guide.

Daylighting with Christopher Meek

AN INTERVIEW

It's no secret that daylighting saves energy. For those readers who are new to the concept of daylighting, what would you say are its primary benefits for owners and occupants alike?

The benefits of daylighting are abundant. I am an architect, so space quality is a big part of what I am interested in. Spaces that are illuminated with daylight breathe with light and life, changing over time reflecting the nature of the sky and surrounding landscape with the seasons, weather, day and night. I love how a well daylit space is so different from night to day. I once worked in a windowless office and it was awful—very alienating from the rhythms of the world. Studies have correlated spaces with daylight and views with increased satisfaction, productivity, and even better health. This translates into a more valuable building in many dimensions.

What are your top strategies and tools for assessing daylighting potential and integrating with other building systems (such as controls, electric lighting, etc)?

I am a little bit of a simulation geek, so I like **Radiance**, a backward ray-tracing lighting calculation engine developed by Greg Ward at Lawrence Berkeley National Labs in the 1980's. However, it can be cumbersome for those without a strong background in simulation. But in my consulting work I primarily use rules of thumb combined with my experience looking at occupant behavior and expectations. Over the past two years I have worked with NBI, the University of Washington and the University of Idaho to develop the *Daylighting Pattern Guide* which translates a decade of our experience with daylighting design in the Northwest into a handful of rules of thumb that can serve as a starting point for designers seeking to integrate daylight as a primary source of illumination in their building projects.



There is a growing interest in maximizing daylighting in existing buildings. What first steps or best practices would you recommend for achieving this?

The first step is understanding the existing patterns of daylight and sunlight within a building. Then, synergies can emerge between the lighting criteria, occupancy patterns, tolerance for glare, and energy goals. This plays out in all sorts of ways from space planning to workstation design, and window coverings selection and lighting system integration. Since there is so much untapped energy efficiency potential with daylight in our existing building stock, the possibilities are very exciting.

Based on your experience, what do you think is the single biggest obstacle to more widespread use of daylighting in both new and existing buildings? What are some solutions?

Effective [electric] lighting design and controls integration remain one obstacle. We really need to think about lighting as a dynamic system, with a “daytime scene” with daylight as the primary source of ambient illumination, and a nighttime scene, which will usually have a very different distribution pattern and maybe lower ambient illumination criteria. This represents a tremendous opportunity for designers to create a new generation of dynamic and beautiful spaces while realizing radically decreased lighting power consumption.

ALG ONLINE was created with the help of 23 authors—leading experts in their fields, including education, research, engineering, manufacturing, and design. This month, contributing author and daylighting expert, Christopher Meek sat down with ALG Online to share his thoughts on best practices for incorporating daylighting strategies into both new and existing buildings. For more, visit algonline.org
