



Energy performance solutions from NBI



Daylighting Pattern Guide helps building projects utilize natural light

What is the Daylighting Pattern Guide?

The Daylighting Pattern Guide (DPG) is a free, interactive tool that helps design teams incorporate proven daylighting strategies into commercial building projects for substantial reductions in lighting power consumption and overall building energy use. The guide also can be used to demonstrate to building owners and others the benefits of daylighting and why it's worth pursuing.

The guide is the latest addition to the New Building Institute's Advanced Buildings® suite of tools and resources supporting best practices in high performance building. Access the DPG at:

www.patternguide.advancedbuildings.net.

How was the Daylighting Pattern Guide developed?

This design tool uses a combination of 19 real-world built examples and advanced simulation to set the stage for analysis and comparison of design alternatives. Each “pattern” explores the inter-relationships and role of sky condition, site, building aperture, interior volume and space planning in delivering visual comfort to building occupants while supporting energy efficiency goals.

Sensitivity analysis of key design variables in each example was conducted to see whether the outcome was optimized and to demonstrate the impact of alternate—good and not so good—design decisions on the daylighting performance. Design variables that work together to contribute to the success of each space were also identified.

Detailed examples present a wide range of spatial scales and uses. Applicable project types include offices, schools, libraries, laboratories, museums, industrial facilities and recreational facilities.

Is the Daylighting Pattern Guide Right for Me?

The Daylighting Pattern Guide is easy-to-understand and apply. It presents information in a visual and interactive manner that is useful to architects, engineers, lighting and interior designers as well as those with limited background in daylighting and lighting design practices.

About the Development Team

New Buildings Institute & Advanced Buildings

New Buildings Institute (NBI) is a nonprofit organization working to improve energy performance of commercial buildings.

NBI provides design teams with tools and guidance to help them create high performance buildings through its Advanced Buildings® suite of resources.

newbuildings.org
advancedbuildings.net

Boise Integrated Design Lab

The University of Idaho Integrated Design Lab (IDL) in Boise is dedicated to the development of high performance energy-efficient buildings in the Intermountain West through research, education and outreach.

idlboise.com

Seattle Integrated Design Lab

The University of Washington Integrated Design Lab (IDL) provides regional design teams with access to the best building-performance knowledge available through direct project support, research, education and training.

idlseattle.com

Why is daylighting important?

Daylighting commonly refers to the use of sunlight, skylight, and diffuse overcast sky to illuminate interior spaces. Integration of daylighting strategies along with energy-efficient lighting and controls has been shown to reduce energy consumed by electric lighting by up to 70 percent.

Studies show that daylighting connects occupants to outdoor environments offering non-energy benefits such as increased occupant productivity and comfort.

Who is behind the guide?

The Daylighting Pattern Guide is the result of a collaboration between New Buildings Institute (NBI) and the Integrated Design Labs in Seattle and Boise. NBI is a nonprofit organization working to improve the energy performance in commercial buildings. The guide is offered through NBI's Advanced Buildings suite of tools and resources to help design teams lower energy use in building projects.

Lead developers of the guide include NBI Technical Director Mark Frankel; Christopher Meek, an assistant professor of architecture at the University of Washington and lighting specialist at the Seattle Integrated Design Lab; and Kevin Van Den Wymelenberg, an assistant professor at the University of Idaho and director of the Boise Integrated Design Lab.

Ongoing Development

The DPG development team has taken preliminary steps to expand the DPG to include common “patterns” of integrated, holistic lighting design. This next phase of work focuses on energy performance and will include climate specific annual performance analysis for daylight (sufficiency and excessiveness) and zone energy usage (peak load and annual energy consumption for lighting, heating and cooling). For more information, visit:

patternguide.advancedbuildings.net/DPG%20E

Other feature tools and resources available in the Advanced Buildings suite include:

ALG Online

algonline.org

Daylighting Guide for Office Interiors

advancedbuildings.net/daylighting-office-interiors

Core Performance®

advancedbuildings.net/tools-guidance/core-performance

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