



Custom Skylights, Walkways and Canopies



IntelligentEnvelopes™

Introduction

Linel is headquartered in Mooresville, Indiana and is part of the Mestek Architectural Group. In addition to Linel, Mestek's architectural activities include American Warming and Ventilating (AWV). The emphasis for these companies is in providing products and solutions that beautify and improve the performance of buildings through Intelligent Envelopes™.



The movement toward sustainable building designs is being driven largely by environmentally-sensitive building owners and/or their prospective tenants. As these owners and their consultants weigh their design objectives and alternatives, they often find that skylights offering natural daylighting in interior spaces are an ideal part of the "green" solution for their buildings.

Skylights providing daylighting can dramatically reduce the amount of artificial lighting required for many hours of the year. Indeed, a certain amount of daylighting is now part of the prescriptive design requirements in the new Standard for the Design of High Performance, Green Buildings, except for Low-rise Residential Buildings (ANSI, ASHRAE's, USGBC, IES 189.1). The US Green Building Council's (USGBC) LEED rating system offers credits for daylighting, and skylights are a common design feature in many "green" buildings.



With proper skylight design, there can be significant energy savings in commercial applications. Savings from daylighting can cut artificial lighting energy use by up to 80 percent according to the US Department of Energy's (DOE) Federal Energy Management Program. In terms of cost savings, the DOE reported that many commercial buildings can reduce total energy costs by up to one-third through the optimal use of daylighting.

In addition to energy savings through reduced artificial lighting, studies have proven that people feel more comfortable and are more productive in naturally lit spaces. Natural daylight provides a positive psychological effect over artificial light.

Linel offers an extraordinary range of skylights with a variety of framing systems, materials and finishes including building integrated photovoltaic (BIPV) cells.

CUSTOM VERSUS STANDARD SKYLIGHTS

There are many manufacturers of standard skylights. Linel's focus is on the more complex custom skylights which require extensive engineering, precise manufacturing and installation coordination. This includes skylights with highly complicated and unusual geometry, architectural details and finishes. Linel skylights are highly engineered to resist air and water infiltration, condensation, thermal radiation, solar radiation and acoustical sound transmission.

LINEL'S OFFERING

- Structural framing systems in a variety of materials and designs are available.
- Wide variety of glass types including laminated, insulated, photovoltaic, thermochromic, electrochromic, point-supported, etc. Various tinted, decorative ceramic and solar control coatings are also available.
- Linel is a licensed applicator for Akzo Nobel, PPG and Valspar to meet AAMA painting (2603, 2604 & 2605) specifications. Elements as large as 30" W x 66" H x 34 feet L can be accommodated in our paint line – one of the largest profile capable systems in the country.
- Pressure equalized, blast resistant and hurricane resistant system designs.
- Thermal modeling to confirm performance expectations.
- All designs are completed using 3-D modeling engineering software fully integrated with CNC-controlled production equipment.
- Mock-up testing and thermal simulations for NFRC "site-built" certification.

LINEL'S TRACK RECORD AND CAPABILITIES

Linel has more than 30 years of unsurpassed experience in the design and supply of custom skylights. Linel's portfolio with thousands of successful projects includes some of the largest, most complex skylights in both new and renovation applications.

Linel is dedicated to innovation and has comprehensive design capabilities. While this brochure provides a general overview of our capabilities, we welcome the opportunity to develop solutions to satisfy your unique requirements.

WATER MANAGEMENT

Beyond aesthetic and structural considerations, a key issue in skylight designs is water management. Even with well-sealed skylights, some water infiltration beyond the exterior glazing is inevitable over time. Similar to windows and curtain walls, skylights are also subject to wintertime condensation when the surface temperature of the interior glass and metal surfaces falls below the dew point temperature of the interior conditions. Any water and condensation must be collected and drained to the exterior with a continuous drainage system or provided for by other means in the skylight design.

Linel skylights use sophisticated approaches to collect, channel and drain away any water from infiltration or condensation. This includes redundancy in the design so the primary drainage system is backed-up by a second and often times a third line of defense to control the water.

Gravity has been working reliably for much longer than the most effective sealants on the market today. A properly designed skylight system anticipates and accommodates water infiltration and condensation through mechanically designed drainage systems incorporated into the framing system of the skylight.



DURABILITY

Skylight metal framing members and glazing undergo significant and differential movements in response to daily and seasonal temperature changes. Linel skylight designs anticipate and accommodate this thermal movement to prevent the introduction of stresses caused by restrained movement.

SAFETY

There is always a possibility of a projectile (such as during a severe storm) hitting a skylight. All sloped areas of Linel skylights are glazed with laminated glass and glass anchoring techniques as required by code to assure post-breakage glass retention.

NEW OR RENOVATION

Linel not only provides skylights for new construction, but performs renovations of existing skylights. Linel has renovated many prestigious and historically important projects including:

- The Solomon R. Guggenheim Museum in New York, NY
- The Enid Haupt Conservatory Bronx Botanical Gardens in New York, NY
- The Corcoran Gallery of Art in Washington DC
- The Addison Gallery at Phillips Andover Academy in Andover, MA
- Indiana University Art Museum in Bloomington, IN

When performing renovations, Linel will update the existing skylight's design by incorporating new technology (such as insulated glass, more sophisticated and redundant water management, etc.) and in many cases will provide new custom extruded profiles to match the original profiles. In fact, the design of custom dies to match existing profiles is routine for Linel.

MATERIAL ONLY OR TURNKEY INSTALLATIONS

Every Linel skylight project is assigned a project manager who coordinates activities with the architect, general contractor and installer, as well as internally with engineering and manufacturing. Linel can provide the skylights as a material only contract, or installed as a turnkey solution.

It is important to remember that there are several custom skylight offerings to choose from, but the outcome largely depends on rigorous engineering, state-of-the-art manufacturing, attention to detail, experience and close coordination with everyone involved in the project. For the most demanding and complex skylights, you can depend on Linel's experience and expertise.

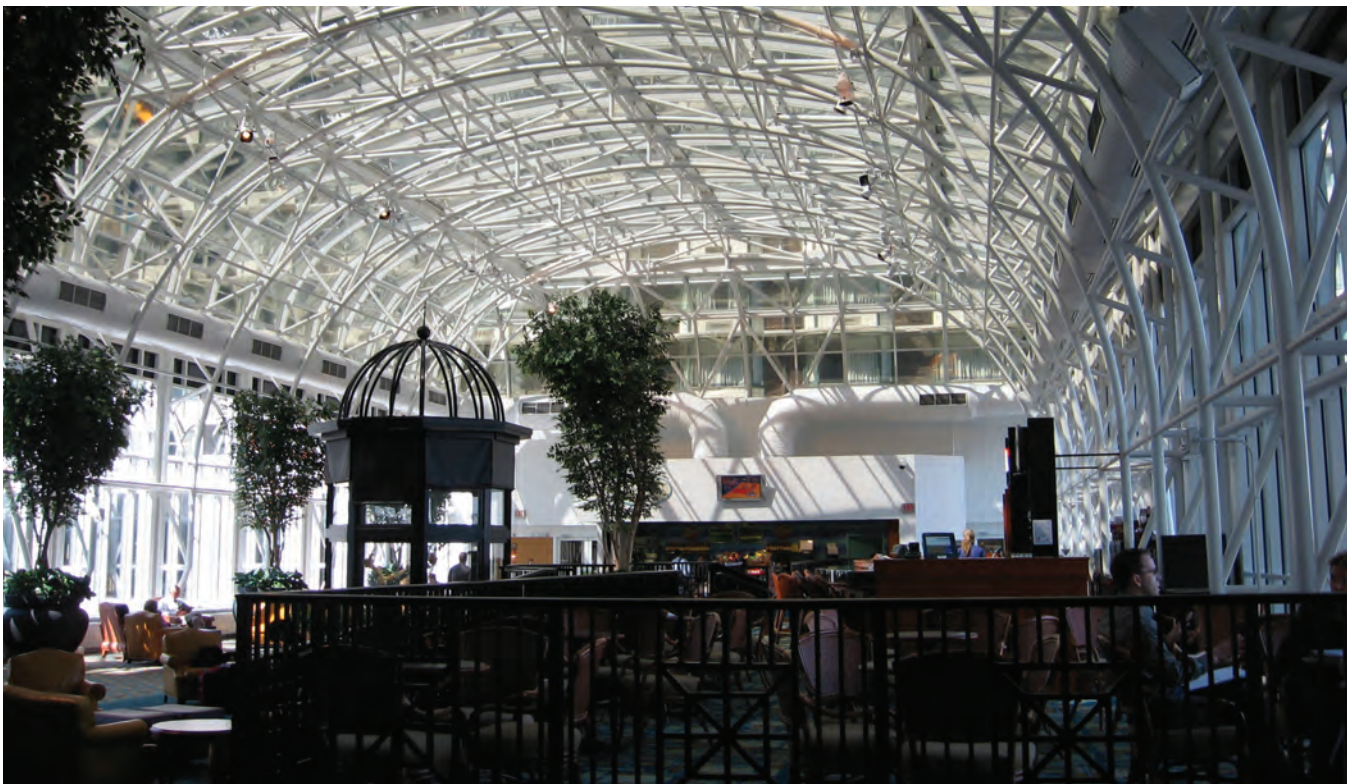
SKYLIGHTS WITH SOLAR SHADING LOUVER SYSTEMS

It's quite common to use a solar shading louver system with a skylight to control and manage the natural daylight. Linel can provide this integrated solution.



Custom Skylights

Galt House Hotel & Suites
Louisville, KY



Case Western Reserve
Cleveland, OH
Top Left Photo

Circle Center Mall
Indianapolis, IN
Top Right Photo

Marion County
Central Library
Indianapolis, IN
Bottom Photo



Custom Skylights

Lucent Technologies
Naperville, IL



Nations Bank (Bank of America)
Charlotte, NC
Top Photos

Deaconess
Cincinnati, OH
Bottom Photo

LINEL



Custom Skylights

Woodrow Wilson High School
Washington D.C.
Top Photo

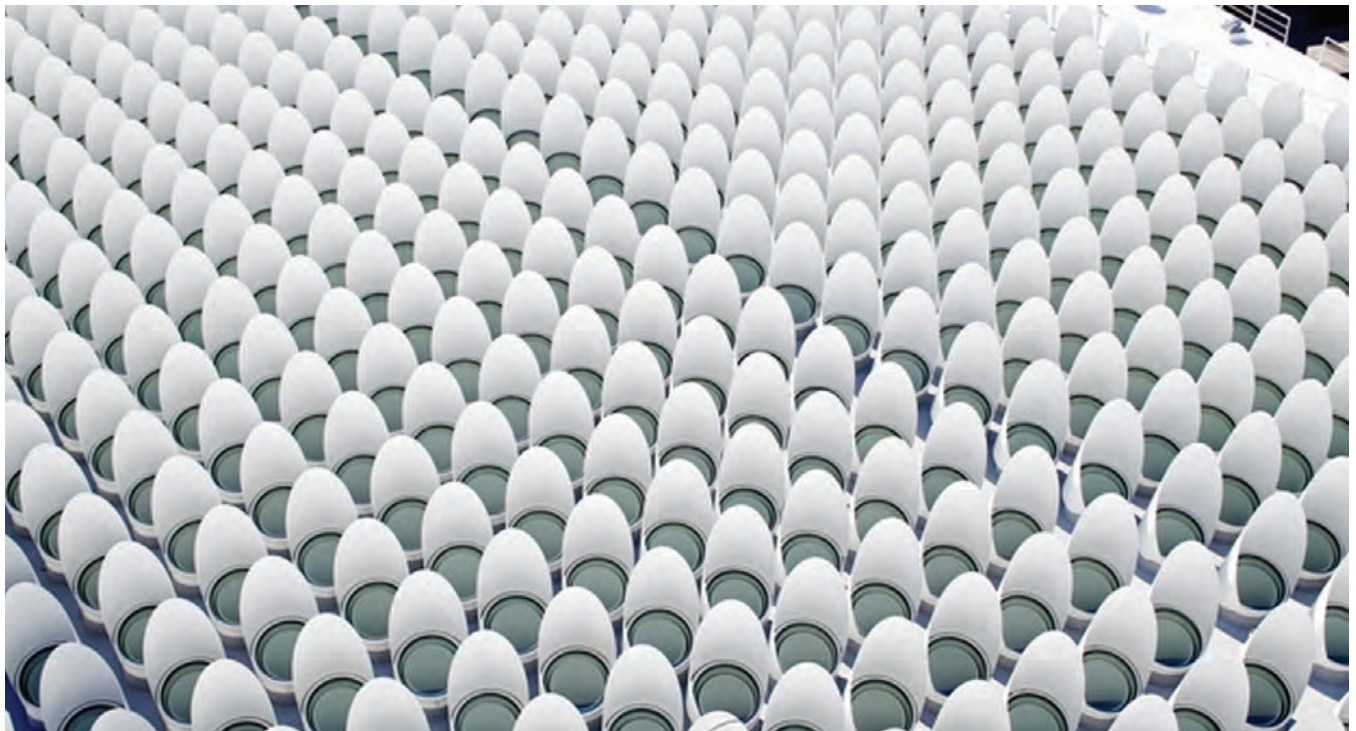
National Academy of Sciences
Washington, D.C.
Bottom Photos



High Museum of Art
Woodruff Art Center
Atlanta, GA
Top Photo

Columbia Public Library
Columbia, MO
Bottom Photo

LINE 



Restoration Skylights

The Solomon R. Guggenheim Museum
New York, NY
Top Photo

Enid Haupt Conservatory
Bronx Botanical Gardens
Bronx, NY
Bottom Photos





Walkways

Helen DeVos Children's Hospital
Grand Rapids, MI

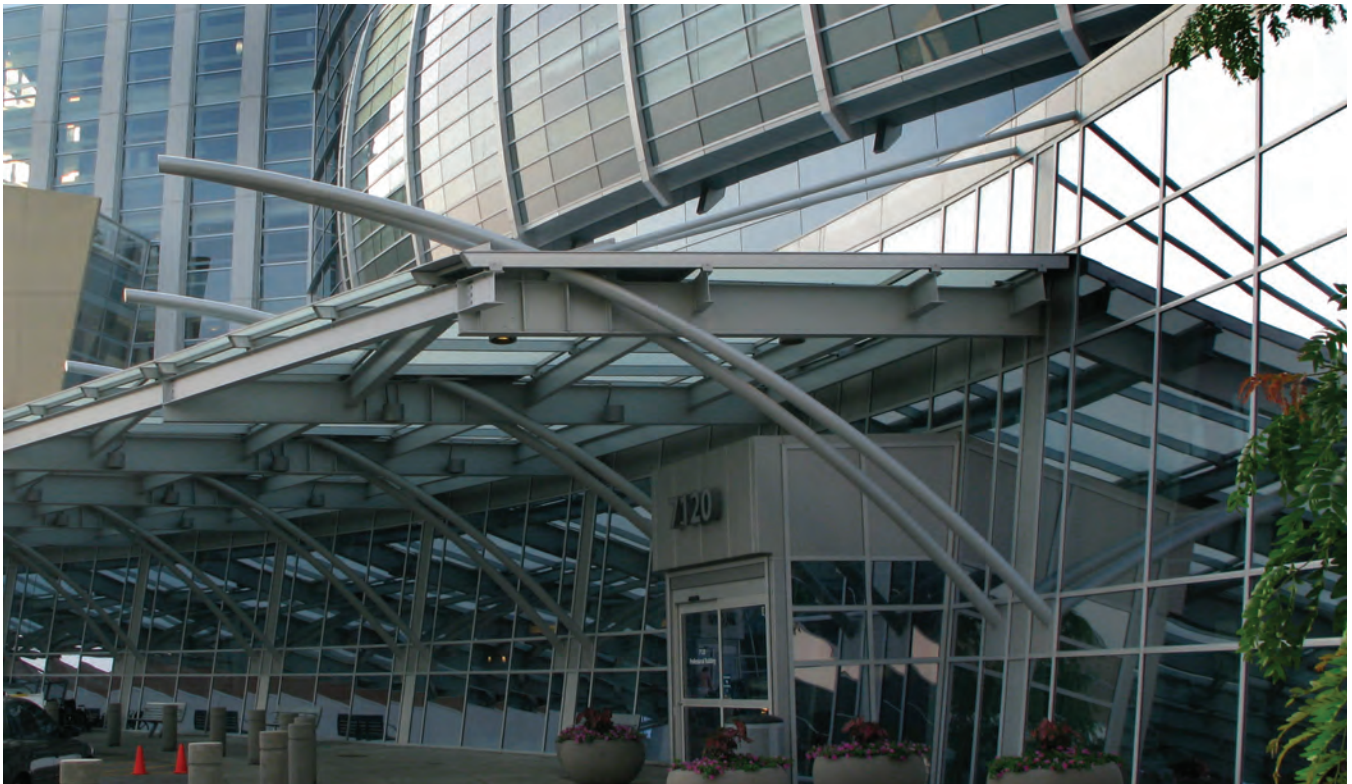




Canopies

Cary Amphitheater
Cary, NC
Top Photo

Community North Hospital
Indianapolis, IN
Bottom Photo



North Point Mall
Alpharetta, GA
Top Left Photo

181 West Madison
Chicago, IL
Top Right Photo

Pinnacle Building
Atlanta, GA
Bottom Left Photo

Dolphin Pavillion
Mystic, CT
Bottom Right Photo



LCSWC-B-2

MF 08 63 00 - Metal-Framed Skylights

MF 10 73 26 - Walkway Coverings

MF 10 73 16 - Canopies



MESTEK

ARCHITECTURAL

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