Natural light has the ability to transform a space, providing a bright and engaging environment for learning. But while adding daylight to a space may seem simple, the truth is that once you travel roughly 30 to 40 feet inside the perimeter of a building, natural light from traditional windows and curtainwall has a difficult time providing sufficient illumination for interior spaces. As a result, areas close to the exterior of the building are well lit during peak daylight hours while interior spaces are left dark and completely reliant on energy-hungry artificial lighting.
The design demands and space requirements of education facilities often make it necessary to look beyond the perimeter of a building for daylighting solutions, forcing a shift in focus to skylights. Whether they're custom designed or pre-engineered and pre-assembled, skylights can be strategically placed to offer the highest level of comfort and occupant satisfaction, and glazing materials can be selected that diffuse direct penetration of the sun's rays and make for a more comfortable learning environment.

Cost vs. Benefit
While skylights are often seen as a luxury item during the planning stages of a new facility, cutting back on initial material costs can be a major mistake. While incorporating skylights may add to the overall cost of a building, the monetary savings over the life of the structure can be significant.

In education facilities, the advantages of using daylighting can be even greater. A study done by Heschong Mahone Group called “Daylighting in Schools” evaluated daylighting and human performance. The study, done with three separate school districts...
located in differing climates, with different building designs, teaching styles, and curricula, indicated that “most teachers felt that windows and daylight[ing] improved the mood of their students, keeping them calm and improving their attention spans. Higher illumination levels in daylit classrooms simply help to keep children more alert and capable of absorbing new information.”

It’s also important to consider glazing materials when designing or retrofitting a skylight. While transparent glazing offers views, it can also let in too much sunlight, causing hot-spots and glare. Translucent glazing materials provide some added benefits to classrooms in that they eliminate glare, allowing for easier reading of everything from books to tablets to computer monitors.

How much will additional daylighting add to the overall budget? Since every building is unique, it’s hard to say. Glass glazed skylights can be costly and heavy, making them difficult to install into existing openings due to the possible need for additional structural support. Translucent panel skylights are generally less expensive, and the initial cost of a can be
made up relatively quickly depending on the building’s design and use. Be sure to examine all of your daylighting options – including glazing materials, complete system costs and thermal performance – before making a final decision on which skylight is right for your project.

Light up Your Design
Perhaps the most important influence on a skylight’s ability to captivate occupants and provide an architectural focal point is its placement within the building. People enjoy having access to natural light during daytime hours, and are drawn to naturally lit locations as they provide a bright, lively and welcoming place to meet. When utilized in an area where hallways converge to create a common area, a skylight offers a welcome break from dark, enclosed spaces, and creates a natural gathering area for people to converse. When a space needs a design boost, an ornately structured dome or pyramid skylight becomes a focal point unto itself, encouraging occupants to pause and admire both the skylight and the surrounding architectural elements.
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*According to December 2014 Customer Survey; N=2166.
Properly designed daylighting eases energy costs and gives occupants soft, usable light that enhances their productivity and increases their well-being.

Color also plays an important role in design consistency. Making creative use of finish colors allows you to easily tie in a school’s team colors for a unique and personalized effect, and some glazing materials, like translucent panel systems, offer the option of colored insulation to create an eye-catching stained glass effect.

Glazing options can also influence the overall design. Transparent glazing, for instance, provides unfettered views of the sky and offers enhanced visual impact. Translucent systems are designed with an internal grid pattern that can highlight building sight lines and blend well with both traditional and modern aesthetics. For even more visual appeal, consider mixed glazed systems that combine the thermal performance benefits of translucent panel systems with the dramatic views that glass provides.

Skylight Myths and Reality
Despite the versatility, cost-effectiveness and adaptability of skylights, some people are reluctant to add them to their plans because of folklore and horror stories regarding leaks and poor reliability. The truth is that poorly designed and badly installed skylights can leak — in much the same way that a poorly installed roof can leak. By taking a few moments to investigate both the daylighting manufacturer and the installer, you can often save yourself a great deal of time, trouble and money.

The devil is also in the details when it comes to making the right daylighting choice. If there’s concern over excessive interior humidity, or if the skylight will be exposed to wide temperature fluctuations, make certain that your daylighting system includes high-performance sealants and integrated water management — weep holes and gutters – in the framing system. This will ensure that any water on the interior of the system either evaporates away safely or gets redirected to the exterior of the building. If you’re unsure if a system features integrated water management, ask your daylighting manufacturer.

Another concern that often arises with skylights is weight. Traditional glass skylights are heavy and often require substantial structural support. While this may not have a huge effect on your budget and schedule when planning new construction, it may strain a remodeling project due to the need for costly structural reinforcement. Lightweight glazing options like translucent panel systems can be a more cost-effective daylighting solution while still providing the daylighting benefits of a traditional glass glazed system.

Skylights have also received a bad rap for causing excessive heat and unbearable glare for building occupants. While direct sunlight is not necessarily a serious problem in transitional areas like atriums and hallways where occupants are passing through quickly, it can cause uncomfortable “hot-spots” in libraries and classrooms, and also can wreak havoc on HVAC systems. Too much sunlight and solar heat gain can also be an issue for office areas and work spaces that are filled with computers and other electronics. Fortunately, properly designed daylighting eases energy costs and gives occupants soft, usable light that enhances their productivity and increases their well-being.

Make Daylighting Fundamental
Natural light and education facilities are the perfect pair, benefiting students, teachers, and the bottom line. The next time you’re thinking of incorporating daylighting into a new project or existing building, take advantage of the versatility of skylights. Properly designed and installed, they’re a dependable, cost-effective and beneficial way to utilize energy-saving natural light, and can be configured to make a statement, show off school colors, or simply enhance the overall learning environment.

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