architecture
+glass

CRYSTAL STRUCTURES™
commercial division of sunshine rooms inc.
Since 1980

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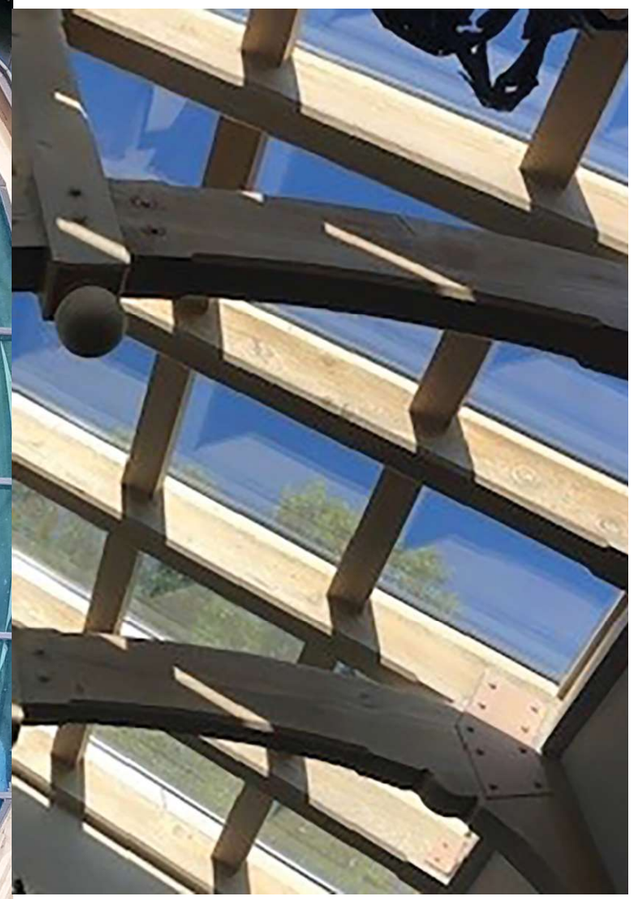
Technology Perfected



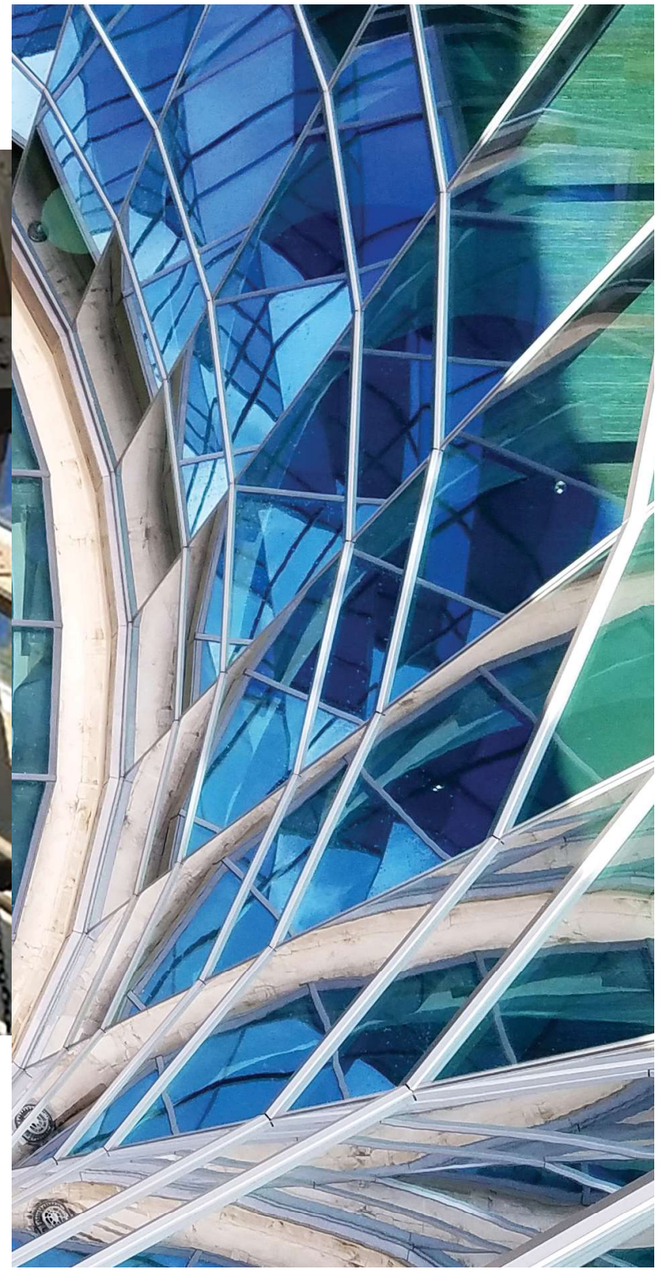
SkyQuest is a non-structural glazing system consisting of a base, pressure cap, cover, and related hardware. It is an attractive and secure system that attaches to your existing aluminum, steel, or wood structural members.

SkyQuest was specifically designed for glazing over an existing structural skeleton. It's great for glass or polycarbonate projects. The wide 300 system is designed to handle the high expansion and contraction ratios of polycarbonate.

SkyQuest systems are ideal for custom sunrooms, solariums, conservatories, skylights, etc. If your old skylight is structurally sound, consider using SkyQuest and just replace the glazing and exterior pressure caps.

SkyQuest is a great way to upgrade your skylight glazing and eliminate leaks without losing the aesthetic appeal.

Skygaze Your Way



by Experience

Crystal Structures provides quality, cutting-edge technology, and professional service from design and engineering to manufacturing and installation.

Glazed structures add beautiful natural light and ambient appeal to your projects. They offer outstanding energy efficiency and minimal upkeep.

This newsletter offers information and details to help you implement glass and polycarbonate into your projects. With over 25,000 commercial and residential projects completed in the United States and eight countries, we are experts at providing the right solution for your client's budget while enhancing the overall design.

Crystal Structures specializes in high-quality skylights, architectural-grade greenhouses, canopies, solariums, pool enclosures, atriums, and conservatories. We also provide structures glazed with polycarbonate such as translucent walls and roof panels.

Many of our projects are custom designed to meet specific requirements. Custom orders are not unusual. Take a look at the examples and information to follow. Contact us when you are ready to get started!

ARCHER HOTEL, FLORHAM NJ

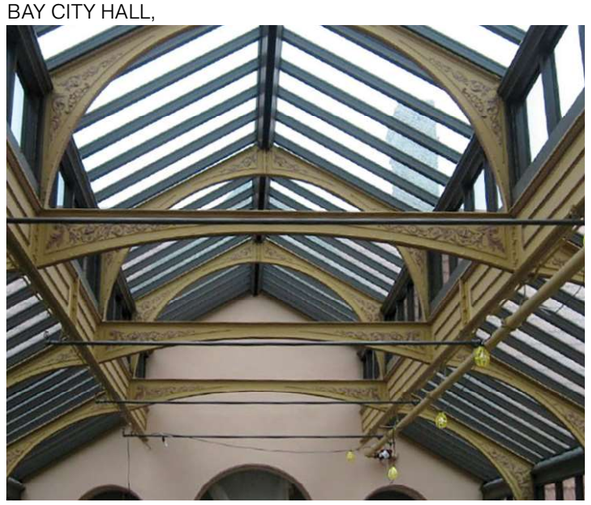
MONOLITHIC, POINT SUPPORTED CANOPY

Revitalizing Antiquity

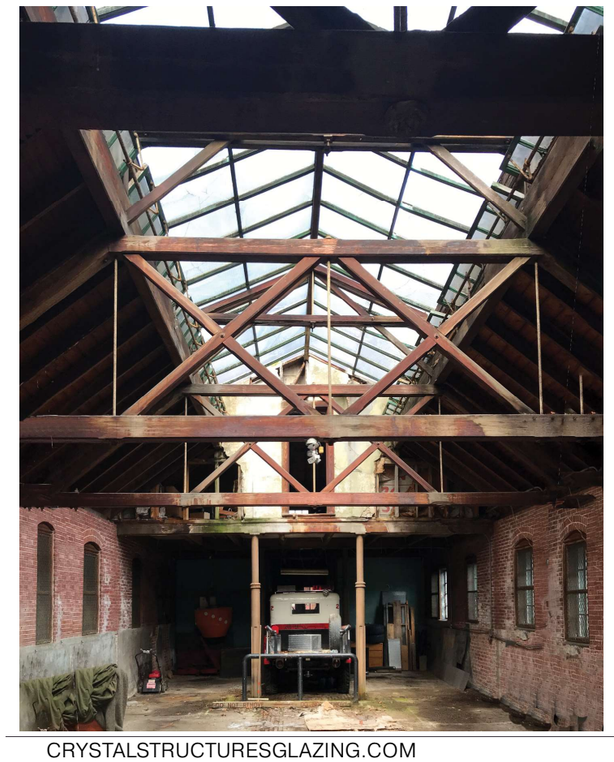
UNION STATION, WICHITA KS

Architects have a unique opportunity and responsibility when it comes to renovating historic buildings with skylights.

BAY CITY HALL,



PALMER STABLES



Historic buildings with skylights are magnificent structures that provide a connection to the past, while also serving as a vital component of modern design. To achieve the perfect balance between preserving the historical significance of a building and meeting the modern demands of its occupants, it is important to respect the renovation process for historic skylights.

Knowing the historical significance of the building is the foundation of a good restoration. Architects must take into account the original design of the skylight, the materials used, and the purpose it served at the time of construction. This knowledge can then be used to determine how best to update the skylight while preserving its original character.

Once the historical context has been established, the renovation process can begin. It is important to preserve any original components that can be reused in the renovation process. While current building codes may dictate the underlying structure, the ability to construct a historically accurate replica is essential including any special metals like copper.

Throughout the renovation process, it is important to work closely with historical preservationists and other experts to ensure that the skylight remains true to its original design and purpose. This may include consulting with experts on historical materials, techniques, and design elements, as well as working with local historical societies or other organizations to ensure that the renovation meets all necessary standards and regulations.

Renovating historic skylights requires a delicate balance between preserving the past and meeting modern needs. With a thorough understanding of the building's historical context, careful attention to detail, and collaboration with historical preservation experts, architects can create stunning, functional skylights that honor the past while also serving the needs of modern occupants.

Classic Canopies

As an architect, you are always looking for ways to improve the functionality and aesthetic appeal of the buildings you design. One element that has gained popularity in recent years is the canopy. Canopies are a versatile and stylish addition to any building, offering a range of benefits that go beyond their visual appeal.

In addition to its practical benefits, a well-designed canopy can be a stunning visual element to the building. Canopies are available in a variety of materials, from metal and glass to fabric and wood, and can be tailored to suit any aesthetic preference. The result is a building that not only offers protection but also makes a statement, drawing the eye and creating a sense of depth and dimension.

But the benefits of a canopy don't stop there. By shading the building's windows and doors, a canopy can reduce solar heat gain within the building, leading to a reduction in energy usage and costs. This not only benefits the environment but also increases the building's value and saves money in the long run.

Another benefit of a canopy is its ability to improve the functionality of the building. By providing a sheltered area for outdoor seating or enhancing privacy between indoor and outdoor spaces, a canopy creates a more seamless transition between the two, making the building more comfortable and functional for its occupants.

One of the most significant benefits of a canopy is its ability to protect the building's occupants from the elements. Whether it's sun, rain, or snow, a canopy provides a shield, keeping those inside dry and comfortable. This not only enhances the building's usability but also helps to protect its exterior materials from the wear and tear of harsh weather conditions.

Whether it's protection from the elements, aesthetic appeal, energy efficiency, or improved functionality, a canopy offers a range of benefits that will enhance the overall value and usability of the building. Embrace the power of the canopy and elevate your designs to the next level. Let us help you design your next canopy.

ITAWAMBA COMMUNITY COLLEGE,

Statement Skylights

People are attracted to spaces with natural light. The architectural drama of glass ceilings impresses, inspires and provides a biophilic connection to the world.

As an architect, you know that natural light is one of the most important elements when designing a space. It can enhance the aesthetic appeal of a building, create a warm and welcoming atmosphere, and even promote wellness among occupants. And when it comes to natural light, statement skylights are the perfect way to make a dramatic impact on your design.

A statement skylight is not just a source of light; it's a feature that draws the eye and captures attention. It can transform a dull, uninspired space into a vibrant and lively one. Statement skylights can come in all shapes and sizes, from large, sweeping structures to more subtle, understated designs. But no matter what style you choose, a skylight is sure to be a conversation piece that elevates the entire design of your building.

When considering a skylight, it's important to think about the practical aspects of the design. You want to make sure that the skylight is properly sized and positioned to provide the right amount of light to the space. You'll also need to consider the placement of the skylight in relation to other architectural features, such as walls, columns, and beams.

One key factor to keep in mind is the orientation of the building. If the building faces north or south, you'll want to design the skylight to capture as much light as possible throughout the day. On the other hand, if the building faces east or west, you'll want to design the skylight to minimize glare.

Another consideration is the type of glass used in the skylight. There are many different types of glass available, each with its own properties and advantages. For example, low-emissivity (Low-E) glass can reduce heat gain and loss, while tinted glass can reduce glare and improve energy

In the world of commercial architecture, skylights are not just a luxury, but a necessity.

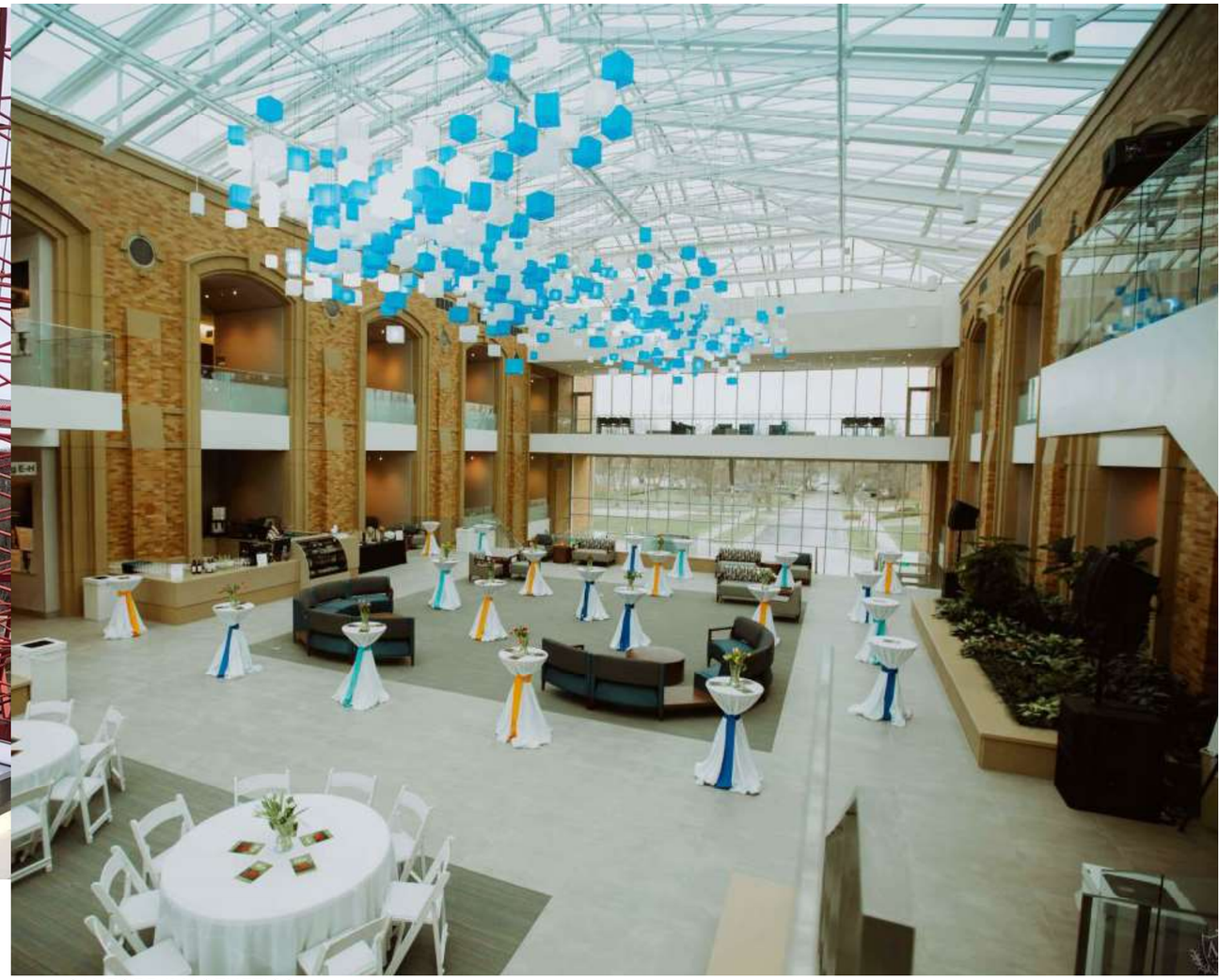
The key advantage of removable skylights is access. The ability to simply lift the skylight to place or exchange equipment is what makes this application so unique. Many industrial buildings and even medical centers have machines that are almost impossible to move once in place. The removable skylight provides another option.

Although these are placed over the openings, the skylights still feature the same protection against the elements keeping the equipment below in good working order.

Removable skylights feature polycarbonate glazing to provide a high-impact, hail-resistant covering that allows ample light to filter through.

These skylights are available in a variety of sizes and configurations. They can be customized to fit your designs, providing a modern look with a practical appeal.

Special Applications



SANFORD IMAGENETICS,

Sometimes a design calls for an exception. Removeable skylights are exceptionally good for many industrial and medical designs.

efficiency. Polycarbonate is also an option for skylight glazing, providing diffuse natural light.

Finally, don't forget about the aesthetics of the skylight. You want to choose a design that complements the overall style of the building while also making a bold statement. Some popular options include curved or angled skylights, multi-paneled designs, and custom shapes like octagons that reflect the unique character of the building.

Skylights are an excellent way to add natural light and visual interest to your building design. Whether you choose a large, sweeping design or a more subtle approach, a well-placed and well-designed skylight can make all the difference.

Designing a proper greenhouse requires careful consideration of safety, building codes, and functionality.

For architects looking to design greenhouses, understanding the differences between a standard greenhouse kit and architectural grade or research-level greenhouses is critical to ensure safety, compliance with building codes, and functionality.

Hobby greenhouses, often used by amateur gardeners, are typically small and made from affordable materials like PVC, aluminum, or wood. These structures are not held to the same safety standards as larger, more complex structures, and as such, the structure must meet local building codes and safety regulations.

Architectural-grade or research-level greenhouses are designed to withstand harsh weather conditions and provide precise control over the greenhouse environment. These structures are typically made from high-quality materials like aluminum, steel, or glass, and are custom-built to meet specific requirements.

To ensure safety and compliance with building codes, architects designing greenhouses should be familiar with the International Building Code (IBC) and the International Fire Code (IFC). The IBC sets minimum requirements for the design and construction of buildings, including greenhouses, while the IFC addresses fire prevention and safety measures.

For example, the IBC requires that greenhouses be designed to withstand wind and snow loads and that they are anchored to a foundation or slab. The IFC requires that greenhouses have adequate ventilation and smoke control systems to prevent the buildup of toxic gases and smoke in the event of a fire.

You should also consider the potential risks associated with the materials used in

To obtain LEED credits related to daylighting, you'll need to meet specific criteria related to the amount of natural light that enters the building. The first criterion is the daylight factor, which is a measure of the amount of natural light that enters a space compared to the total amount of light available outside. The higher the daylight factor, the more natural light is entering the space.

The second criterion is the illuminance level, which is a measure of the amount of light that falls on a surface. LEED requires a minimum illuminance level of 10 footcandles (fc) for all regularly occupied spaces, but the optimal level may vary depending on the specific use of the space.

To meet these criteria, you'll need to incorporate daylighting strategies into your building design. One effective strategy is to use large windows and skylights to maximize the amount of natural light that enters the space. However, it's important to balance this strategy with the need for energy efficiency and thermal comfort.

The orientation of the building and the placement of the windows and skylights should also be considered. For example, south-facing windows can provide ample natural light but may also lead to glare and, with the wrong type of glass, overheating, so shading devices and Low-E glass may be necessary.

As always, the aesthetic appeal of daylighting in your design is what your client is most interested in. Natural light can enhance the beauty and warmth of a space/ Incorporating daylighting strategies into your design will create a more welcoming and comfortable environment for occupants.

Using effective daylighting strategies in your design will maximize the amount of natural light that enters the space while still achieving energy efficiency and thermal comfort resulting in LEED
efficiency and thermal comfort resulting in LEED credits.

UNIVERSITY OF ARKANSAS ART DISTRICT

WASHBURN UNIVERSITY, TOPEKA KS

LEED-ING EDGE

When you're client is concerned about sustainability and you're working towards LEED credits, our products help get you there.

You already know that sustainable design is no longer a trend but a necessity. And when it comes to sustainable design, one of the most important factors to consider is daylighting. Not only does daylighting enhance the aesthetic appeal of a space, but it also has a significant impact on energy efficiency and occupant well-being. And if you're looking to obtain LEED credits, daylighting is an essential element to consider.

Architectural Grade Greenhouses

greenhouse construction, such as the release of toxic chemicals from treated wood or the danger of glass breakage. They should design the greenhouse to minimize these risks and ensure that appropriate safety measures, such as protective coatings or shatterproof glass, are in place.

Finally, architects should consider the potential environmental impact of their greenhouse design. A well-designed greenhouse can reduce the need for artificial lighting and heating, reducing energy consumption and greenhouse gas emissions.

In summary, designing a greenhouse requires careful consideration of safety, building codes, and functionality. Architects should be familiar with how to design the greenhouse to minimize potential risks associated with materials and ensure appropriate safety measures are in place. They should also consider the greenhouse's environmental impact and aim to reduce energy consumption and greenhouse gas emissions.

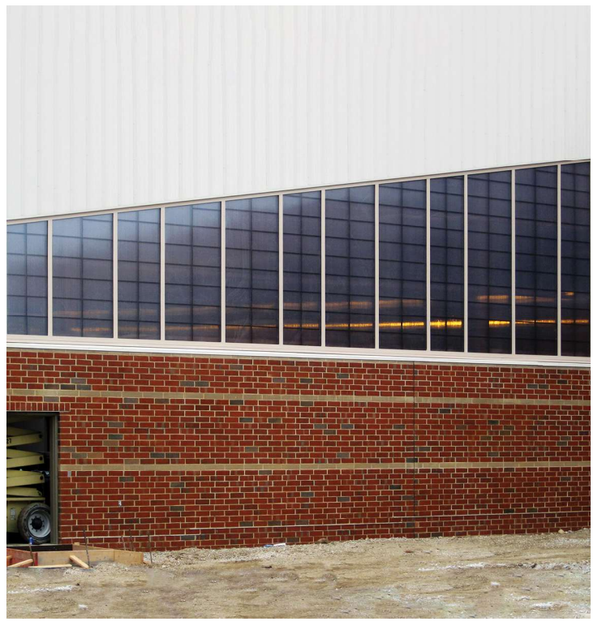
UNIQUE OPTIONS

THERMALITE PLUS

THERMALITE PLUS IS A COST EFFECTIVE, ENERGY-EFFICIENT TRANSLUCENT WALL PANEL SYSTEM THAT PROVIDES DIFFUSED LIGHT.

Typically used in large open buildings that are traditionally dark and difficult to illuminate.

Commercial building applications include manufacturing and maintenance facilities, warehouses, schools, gymnasiums, and large hallways; often in clerestory configurations



THERMAL SKY

THERMAL SKY IS OUR PREMIER INSULATED SYSTEM WITH AN INTERNAL GRID.

This energy-saving system is a 2.75 thick structural sandwich panel system.

Each panel consists of 2 layers of 16 mm multiwall polycarbonate divided by an I-beam extruded from 6061-T6 aluminum.

Standard panels are 4 , 5 , and 6 wide. Custom widths are available.