

StructuresUnlimited

ENGINEERING DAYLIGHT



Photo by Jeffrey Totaro

Introduction to Products + Services

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Custom-Engineered Solutions & Unmatched Service

Structures Unlimited, Inc. is a single-source supplier of structural daylighting systems, including clearspan™ skyroofs®, canopies, removable skylights, pool enclosures and other entire building enclosures. Kalwall translucent panels are secured to aluminum box-beam members to form a rigid, cohesive structure. The unique panel overlap system provides a “shingle effect,” eliminating leaks, while our thermally broken system improves the building envelope performance by reducing solar heat gain and loss.

We offer delegated design engineering for every structure we provide to meet specific project goals, and we partner with you to provide service at every stage, from planning through installation.



Photo courtesy of Kitchen & Associates

Planning + Budgeting

We want your project to be a success. Lean on us during the planning phase to present solutions to meet your needs. We're happy to provide value engineering recommendations to reduce costs. Our daylight modeling capabilities can ensure you're meeting important energy efficiency goals and creating truly usable spaces. Specific target light levels can be obtained simply by changing the translucency of the panel's face sheets or the amount of insulation specified.



Design + Engineering

We offer varying levels of support, from design-assist to being a key player in a design-build team. Structures Unlimited, Inc. can generate support-reaction calculations free of charge, allowing your engineers to determine exactly how to design around our solutions. No matter where you include us in the process, you can count on our team to provide top-of-the-line service and be the problem solvers you need when it comes to unique or non-standard designs.



Precision Manufacturing

You need custom solutions—we create them. It all starts with our extensive inventory of raw material for quick turnaround in our clean and organized fabrication facility. Our in-house manufacturing capabilities make it possible for us to provide these unique designs while staying on track with project schedules. Our award-winning 5-axis Emmegi CNC ensures high-precision fabrication, with aircraft machining-grade tolerances held within .001/meter.



Rapid Installation

By the time a project is ready for installation, the finish line can seem so close yet still so far away. We'll help you cross that line without delay. Our product will arrive pre-finished, and our installation team will handle everything from the curb/footings up. This single-source responsibility, from the start of your project through to completion, provides customers like you with a high level of satisfaction—every time.



Canopy Systems

Structures Unlimited has engineered, fabricated and installed countless covered walkway designs, from simple sheds and ridge roofs to cantilevers double-wings and even cable-mast structures. We have done it all. Just send us your schematics and we'll help develop your design using our proprietary structural aluminum framing system clad with high-performance Kalwall translucent structural sandwich panels.

- + Unique horizontal overlap eliminates leaks that plague other systems
- + Natural rainfall helps keep the panels clean
- + Snow fence and gutter systems are available



**Double-Wing with
Wide Column Spacing**



**Single-Slope
Double-Wing with
Wide Column Spacing**



Freestanding Shed



Center Ridge

Clearspan™ Skyroofs®

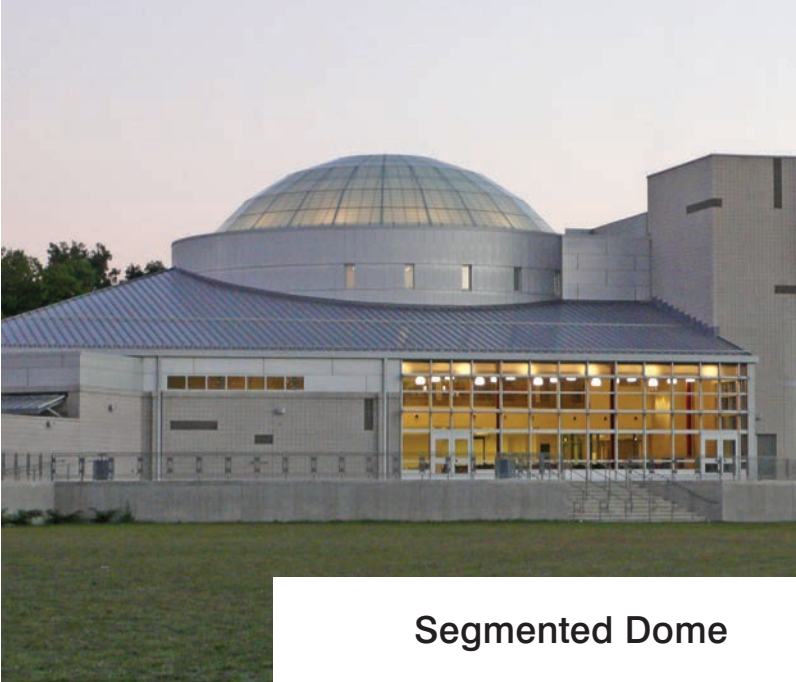
When you understand the huge impact daylighting can have on human wellness, there's no need to go small. Our skyroofs offer unmatched options for monumental daylighting designs. This is perfect for creating impressive atriums and other common spaces, where people will want to congregate under the diffuse, glare-free light.

- + Clearspans of over 100 feet (30 meters)
- + Lower HVAC costs for energy savings
- + Improve comfort + mood in common spaces



Photo by Joseph Romeo

Sawtooth Shed



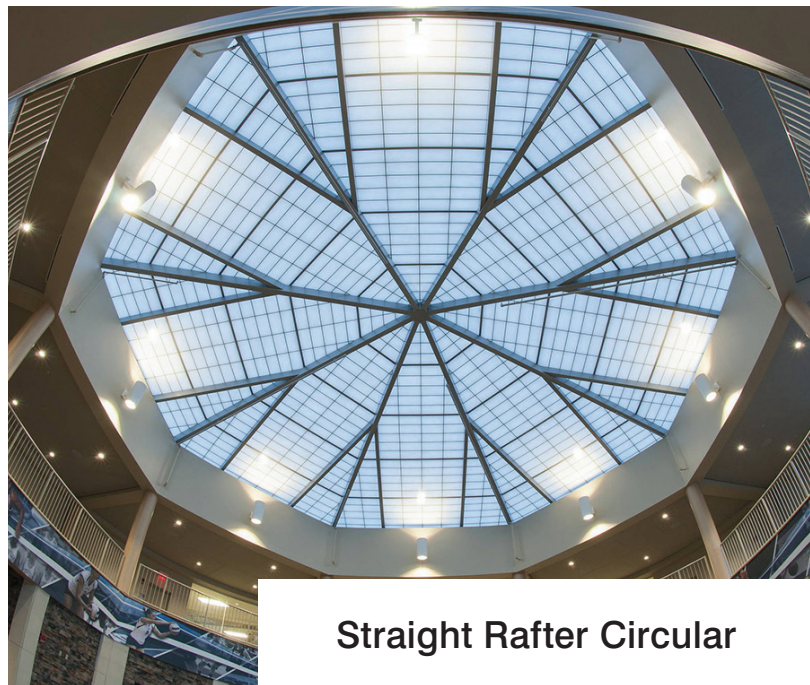
Segmented Dome



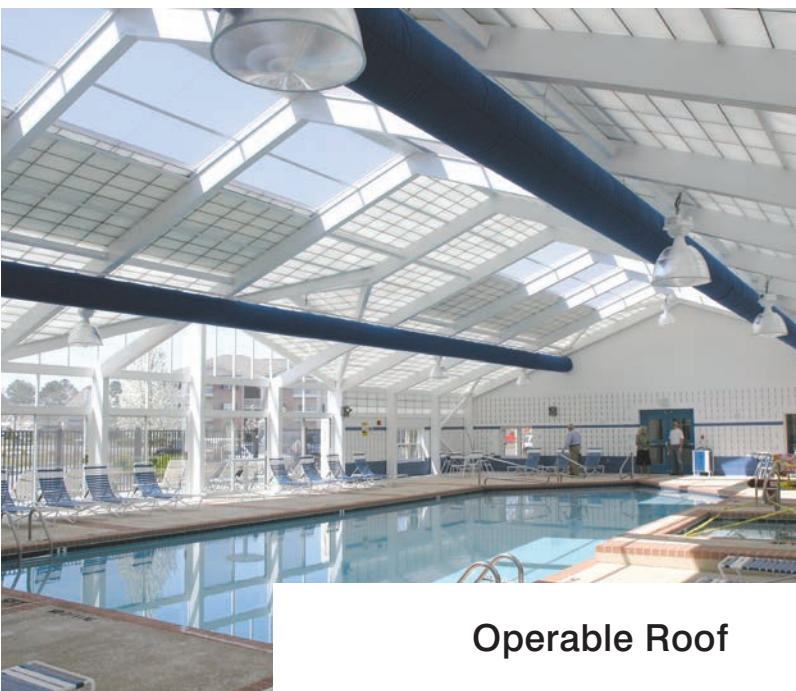
Center Ridge



Sawtooth Shed



Straight Rafter Circular



Operable Roof



Horizontal Panel Pyramid

Pool Enclosures & Natatoriums

Structures Unlimited has the perfect pool solution, whether you're looking for a simple, elegant structure for a residence or private property or a larger natatorium for commercial or competitive purposes.

Swimming pools are highly demanding environments prone to structural, maintenance and even health and safety concerns. For over five decades, we have provided peace of mind as a single-source provider of custom-designed natatoriums and pool enclosures.



Photo courtesy of Kitchen & Associates

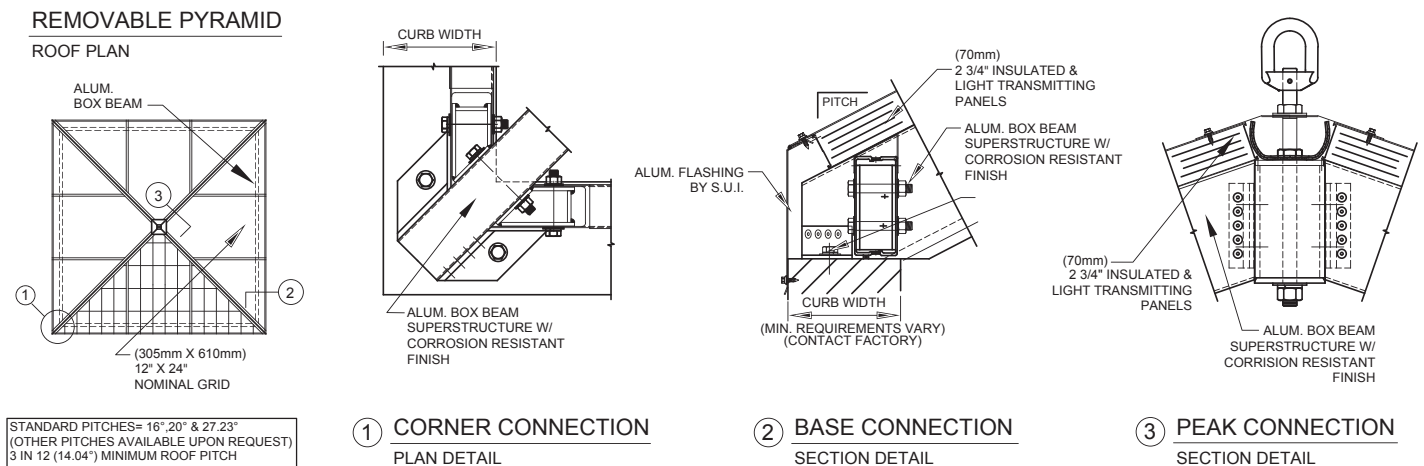
- + Clearspans of over 120 feet (36 meters)
- + Glare-free daylight for comfort + safety
- + Low condensation + corrosion resistance
- + Operable roof options



Industrial & Removable Systems

Including one or more skylights in your commercial building design is a great way to take advantage of natural light and all the benefits it offers. Making that skylight a removable unit provides even greater flexibility, allowing easy installation, addition or replacement of large components and equipment inside.

- + Truly removable as a complete unit from the curb up
- + Cost effective even for occasional access
- + Permanent lifting eye hooks for ease of use
- + Shed, ridge, pyramid or circular skylights



Whether you need a complete building solution fast or just prefer a single partner who can handle everything from the ground up, Structures Unlimited's enclosures offer the perfect mix of structural performance, energy efficiency and beautiful daylighting with Kalwall's translucent panels.

- + A truly pre-engineered building system
- + Perfect for new construction + renovations
- + Clearspans of over 100 feet (30 meters)
- + Panels + superstructure are resistant to chemicals and harsh environments



Panel Technology

Stronger, lighter, more efficient. Well-engineered composite materials transcend the properties of their more traditional counterparts. That is why the building block for all our daylighting systems is a Kalwall, or curved Kalcurve, composite panel module. Our unique structural sandwich panels are formed by permanently bonding two specially formulated translucent fiberglass reinforced polymer (FRP) faces to a grid core composed of interlocking aluminum or thermally broken composite I-beams. Utilizing light-transmitting fiberglass 'batts' or aerogel translucent insulation, insulated panel U-factors range from 0.29 to 0.05 (1.65 to 0.28 W/m²K). Panels are typically 2-3/4" (70 mm) or 4" (100 mm) thick. All panels are installed using our proprietary structural and thermally efficient Clamp-tite™ fastening system.

KALWALL®
StructuresUnlimited

Kalwall Translucent Sandwich Panel Cutaway

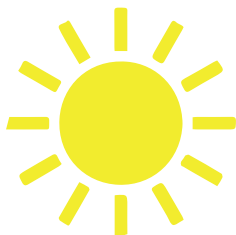
Aluminum or thermally broken FRP and aluminum composite grid core composed of a series of interlocking I-beams in various thicknesses.

Interior shatterproof FRP face sheets are formulated to meet interior finish, flame and smoke requirements of the toughest international codes.

Translucent insulation options, including Cabot's Lumira® aerogel, offer exceptional thermal and solar control properties tailored to each spec.

Exterior color-stable FRP face sheets are all manufactured using a permanent glass veil erosion barrier that eliminates fiberbloom.

Kalwall Weatherable Surface coating provides added protection from the elements that is graffiti-resistant and virtually self-cleaning.



museum-quality daylight™



energy savings



comfort + wellness

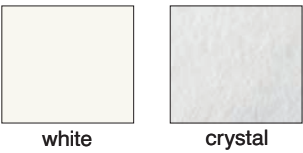


productivity

FRP Face Sheets

Kalwall has developed a full line of high-performance FRP face sheets, including the latest generation of super-weathering formulations that are unrivaled in the industry. Along with a variety of high-performance options, Kalwall offers both standard and optional colors and finishes to provide designers with more flexibility. Translucent white and crystal are standard. Kal-tints™ are optional. Optional FRP finishes are available for interior face sheets only.

Standard Translucent Colors



Optional Translucent Kal-Tints

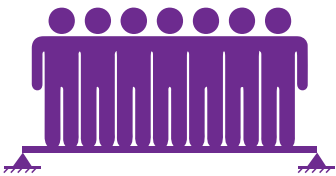


The color and finish swatches shown above are representational. All final color and finish selections should be made from actual product.

Aluminum Finishes

The Clamp-tite fastening system is available in Kalwall Corrosion-Resistant Finish (KCRF), a high-performance, fluoropolymer-based coating that meets the performance requirements of AAMA 2604. KCRF is highly resistant to acids, alkalis, salt, industrial and moisture-laden atmospheres.

Standard KCRF Colors



structural performance



lightweight materials



low maintenance



safety + security

Performance Data: 2-3/4" (70mm) Panel

| FRP Face Sheet Combinations | | Visible Light Transmission % by NFRC 202 | | | | | Solar Heat Gain Coefficient @ 0° by NFRC 201 | | | | |
|-----------------------------|--------------|--|---------------------|---------------------|---------------------|---------------|--|---------------------|---------------------|---------------------|---------------|
| Exterior FRP | Interior FRP | 0.53 U | 0.29 0.23 U | 0.22 0.14 U | 0.18 0.10 U | 0.05 U | 0.53 U | 0.29 0.23 U | 0.22 0.14 U | 0.18 0.10 U | 0.05 U |
| Crystal | White | 37% | 26% | 13% | 7% | 20% | 0.33 | 0.31 | 0.18 | 0.14 | 0.27 |
| White | White | 23% | 16% | 9% | 4% | 14% | 0.26 | 0.25 | 0.16 | 0.11 | 0.20 |
| Crystal | Crystal | 58% | 35% | 14% | 9% | N/A | 0.55 | 0.36 | 0.20 | 0.14 | N/A |

Performance Data: 4" (100mm) Panel

| FRP Face Sheet Combinations | | Visible Light Transmission % by NFRC 202 | | | | Solar Heat Gain Coefficient @ 0° by NFRC 201 | | | |
|-----------------------------|--------------|--|---------------|---------------|---------------|--|---------------|---------------|---------------|
| Exterior FRP | Interior FRP | 0.55 U | 0.15 U | 0.08 U | 0.05 U | 0.55 U | 0.15 U | 0.08 U | 0.05 U |
| Crystal | White | 37% | 13% | 5% | N/A | 0.52 | 0.09 | 0.04 | N/A |
| White | White | 23% | 11% | 4%+ | N/A | 0.38 | 0.06 | 0.04* | N/A |
| Crystal | Crystal | 58% | 17% | 6% | N/A | 0.65 | 0.11 | 0.07 | N/A |

U-value SI conversion: 1.0 W/m²K = 0.176 Btu/hr/ft²/°F



= Air Gap Only %



= Fiberglass 'Batts' %



= Lumira® Aerogel

U-values shown in bold denote thermally broken grid core panels.

Visible light transmission (VLT) NFRC 202 as noted. VLT percentages over 30% are not recommended for most Kalwall applications.

Panel U-values include panel grid core by NFRC 100 or 102. NFRC certified system U-values vary depending on framing. Project-specific information available by request.

Shading coefficient is equal to 1.15 times the solar heat gain coefficient. *By calculation only (not by NFRC 201). By calculation only (not by NFRC 202).



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