The state of the art in energy saving daylighting systems.

TODAY’S MOST VERSATILE • HIGH PERFORMING • COST EFFECTIVE ARCHITECTURAL TRANSLUCENT INSULATING DAYLIGHTING SYSTEM!
CPI — The Architect’s Daylighting Choice

Many of the world’s top architects have chosen CPI translucent daylighting systems to support their most notable designs: ranging from military facilities, schools, universities and athletic facilities, to airports, corporate headquarters, hotels, hospitals and shopping malls. These diverse buildings all share the benefits of quality natural light from CPI - a world class leader in translucent daylighting.

CPI’s unique glazed panel system, enhanced for performance and appearance, provides more value for your construction dollar than any other translucent system available.

Quality Comes to Light®

Natural light is one of the most important design elements in architecture today. CPI’s unique technology gives a designer more control over light than other daylighting systems, while providing stunning designs that will remain contemporary for years to come. No other daylighting company offers the selection of colors, light transmission levels and configurations available from CPI.

Green Construction

CPI Daylighting Systems provide superior insulation and unparalleled energy saving options for use on projects requiring sustainable construction. Significant LEED™ points can be achieved by the introduction of natural daylight into an interior space using CPI Daylighting systems. Contact CPI for assistance with your Green Construction project needs.

What Makes Pentaglas® Nano-Cell® a Unique Architectural Panel?

• Long term resistance to impact and wind loading due to the small cell structure and tightly spaced rib supports
• Superior light diffusion capabilities ensuring excellent quality of natural light
• Refined contemporary look with aesthetic appeal
• Optional Matte Finish for elegant appearance and improved light diffusion
• Environmentally friendly, non toxic 100% recyclable material for Green projects
• Advantages of nature’s honeycomb structure
• Internal flexibility to absorb thermal expansion across the panel and in all directions (on the X, Y and Z axis)
• CPI’s special heavy duty co-extruded UV protection, not available in other panels
• Single source warranty for a complete translucent dry glazed panel system

Revolutionary Technology - from a Highly Focused Company...

CPI pioneered the use of polycarbonate translucent panels for architectural use two decades ago and has followed up this drive toward innovation by developing specialized architectural products such as standing seam translucent systems, hurricane endurance designs, Class A fire-resistant roof construction panels, the new Pentaglas® honeycomb panel and CPI’s latest design - the new ControLite® intelligent daylighting system. Offering comprehensive daylighting solutions from production of raw material to the installation of fabricated systems, CPI can be the sole source for all your daylighting requirements.

ON THE COVER...

Top left: ID 27205 - Third & Pine Parking Garage, Seattle WA
Architect: Sienna Architecture, Portland, OR
Top right: 24863 Univ. North Florida Student Ctr
Architect: Rink Design, Jacksonville, FL
Bottom: 17456 University of IL, Champaign – PE Bldg
Architect: VOA Associates, Chicago, IL

CPI Daylighting Plant, Lake Forest, IL
A variety of Quadwall® systems have been integrated into the building to bring quality light to all work stations and production facilities.

Call 800-759-6985
www.cpidaylighting.com
The Best, Most Versatile and Designer-Friendly Translucent System Available Today

The CPI Danpalon® standing seam, dry-glazing system is available in a variety of daylighting systems suitable for different requirements and applications as illustrated below:

**Pentaglas® 12 System**

- Homogeneous insulating single panel with *three layers of isolated air spaces* and tight honeycomb cell spacing due to smaller spans between rib supports. Insulating values are comparable to 1” insulated glass but at a reduced cost and weight.

**Pentaglas® 16 System**

- Homogeneous insulating panel with *five layers of isolated air spaces* and tight multi-cell spacing due to smaller spans between rib supports. Extraordinary insulation value comparable to bulky insulated fiberglass panels. Offers improved spanning capabilities and unequaled architectural appeal.

**Quadwall® System**

- The preferred system for monumental daylighting. Quadwall® is an assembly of two Pentaglas® panels containing a total of seven isolated air spaces. Quadwall® provides superior performance for the cost over any competitive material. The patented standing seam connector allows the efficient addition of the second layer at marginal extra cost. The two-layer design also empowers the architect with increased control over light, solar transmittance, colors and insulation levels.

**Quadwall® Longspan System**

- All of the advantages of the Quadwall® system with the addition of aluminum H connectors, allowing the greatest spanning capability. Available in Class “A”, Class “B” and Class “C” fire rated roof assembly listings.

**Pentaglas® 12 Longspan System**

- All of the advantages of the Pentaglas® system with the addition of aluminum battens, allowing increased spanning capability. Choice of batten accent finishes are available to enable a variety of designs.

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**The Heart of the System – the Danpalon® Difference**

What makes the Danpalon® system’s performance unique and effective is the heart of the system. The Danpalon® system by CPI consists of:

- **A.** Main polycarbonate panels 2’ nominal widths, extruded with standing seam, 5/8” (15mm) upstands protruding 90° to the panel face
- **B.** A variety of snap-on and interlocking dry-glazed profiles
- **C.** Concealed heavy duty metal retention clips
- **D.** Structural supporting systems
- **E.** A Variety of perimeter aluminum engagement profiles

The fully assembled system is free-floating. Every component is free to thermally expand or contract at its own rate along both the X & Y axis, eliminating oil canning and delamination difficulties and allowing the material to retain structural properties over the life of the skylight. Structural movement is absorbed within the flexible nature of the honeycomb structural core, making skinning directly to steel or wood structures possible. The entire assembly uses no caulking or adhesives, eliminating the difficulty of sealant and adhesive bond failure common in traditional systems. The Danpalon® system connection and weather seal is mechanical, dry, and 100% effective.

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**The System May Be Panelized**

1. Standing seam dry-glazed joint – eliminates need for adhesive bond
2. Co-extruded super-weathering architectural face – eliminates need for periodic resurfacing
3. Prismatic honeycomb “Smart” design – eliminates need for insulation batts
4. 0.4” self-supporting face – eliminates need for internal aluminum grid supports

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www.cpidaylighting.com
Architects Discover the Pentaglas® Advantage

Code Compliance — Meets requirements of The International IBC code as well as regional UBC and BOCA codes for approved light transmitting materials and/or roof covering systems. Other approvals are available.

Fire Retardant — Danpalon® is a non-aggressively burning material with low smoke development and density, available as CC1 or CC2 classification, and in Class A, B or C flame spread. The material will melt away when subjected to fire, forming venting holes through which smoke, gases and heat are released. During tests, no adverse sheet burning effects were noticed, such as fire spread or burning droplets.

Class “A” Roofing System — (U.S. patented) Fire Rated Quadwall® is the only system of its kind that meets Class “A”, “B” or “C” roof covering system requirements (UL790, E-108), and is listed and labeled as a fire rated panel by a recognized independent laboratory. Unlike other Class “A” panels, Pentaglas® maintains excellent weathering properties.

Hurricane Endurance Design — CPI offers an innovative design that complies with Florida codes for hurricane conditions including resistance of impact, cyclic and windload, and air/water infiltration.

Visual Appeal — The honeycomb panel technology provides a visually pleasing glazing surface that is divided into small modules. The standing seam is an excellent design alternative to large, monotonous glazing fields. Quadwall® also offers a flat surface with 2’ module panels. In addition, a choice of polycarbonate or aluminum standing seam battens can be accent by a selection of colors.

Stunning Light Quality — The Pentaglas® honeycomb structure diffuses a greater quantity of pleasing light over a broader area with no glare or hot spots.

High Light Levels — A wide range of light levels, from 3% to 80%, with a broad range of shading coefficients. Pentaglas® delivers more light per insulation level than traditional composite systems.

High Insulation — High levels of insulation are achieved without use of fiberglass batts, which compress, lose values and reduce light transmission. Pentaglas® exhibits improved condensation resistance due to an inherent thermally broken structure. The high thermal transfer occurring at the aluminum grid in fiberglass composite panel systems is also eliminated.

Glazing Options — A wide selection of colors are available in standard or matte finish to allow complementary exterior and interior panels. Allows optimizing of Light and Solar transmission and aesthetic appeal.

Metallic Reflective — Colors offer a perfect blend with other modern materials and enhance solar performance.

Color Stability — The high quality polycarbonate UV composition and co-extruded technology delivers a color-stable panel that will not delaminate, discolor, craze, or fiberbloom.
ID 7331 – Guangzhou Stadiums, China
Architects & Engineers: ADP, Paul Andreu, Architect, Paris, France
CPI met the international design challenge of three gigantic translucent oval shaped domes, built for the Chinese National Games. Over 300,000 SF of Danpalon® Quadwall® glazing system provides a perfect soft quality of light to suit athletic events and television broadcasting requirements.

ID 6028 – JFK Airport AirTrain Stations, New York, NY
Architect: STV Inc., New York, NY
Contractor: Sordoni Skanska, New York, NY
Quadwall® structural half-round barrel vault skylights totaling over 60,000 SF cover 9 terminals served by the new JFK Airport AirTrain system. CPI met the complex design and installation challenge of lifting the fabricated barrel vaults to a high structure in a very busy construction environment under severe time constraints. CPI’s seamless translucent system with no internal grid complements the “tech look” of the JFK terminal design, and provides excellent natural light and thermal protection. Glazing: Quadwall® white over white.

ID 24210 - New England Aquarium Marine Mammal Center, Boston, MA
Architect: McManus Architects, Cambridge, MA
**Clearspan** Canopies and Walkway Covers
Single source responsibility for entire system from the ground up

**LiteBrow™** Suspended Translucent Sun Screens

**U-Lite™**  Transparent or Translucent Monolithic Polycarbonate Panel System for Low Slope Canopy Applications  (less than 2:12 pitch).
Custom CPI Canopies & Walkway Covers

ID 28138 - Transparent Walkway Cover for an amusement park, Orlando, FL
Architects: Gwathmey Siegel & Associates, New York, NY; Glover Smith-Bode, Inc., Oklahoma City, OK
CPI used U-Lite™ to construct this self-supporting aluminum skylight. This challenging project links old and new hotels with a winding walkway.

ID 17988 - Speed School, Chicago Heights, IL
Architect: Detelko Planara Paukner Architects, Olympia Fields, IL
CPI self-supporting drop-off canopy.

ID 15987 - Amarillo Airport, Amarillo, TX
Architect: Reynolds, Smith and Hills Inc, Jacksonville, FL
CPI provided the entire system from the ground up.

ID 24112 – Murray Medical Center, Chatsworth, GA
Architect: Estopinal Group Inc., Jeffersonville, IN

ID 24359 - UPMC Passavant Hospital, Pittsburgh, PA
Architect: Burt Hill Kosar Rittelmann Architects, Butler, PA
CPI provided the entire structure from the ground up. The various monumental aluminum self-supporting entrance canopies span 20 feet wide by 500 feet long.

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Pentaglas® glazing can provide a flush exterior surface and introduces pleasant natural daylight into the interior space.
ID 10851 - Nashua High School, Nashua, NH
Architect: Lavelle Bresinger Architects, Manchester, NH
CPI provided 6,400 SF of Quadwall® LiteWall™ panelized in 6' modules.

ID 20272 - Ferris High School, Ferris, TX
Architect: Rabe & Partners Architects, Austin, TX
CPI provided 7,000 SF of panelized Quadwall® glazing system in 4' modules that were integrated with CPI’s glass windows.

ID 11279 - The Accelerated School, Los Angeles, CA
Architect: Marmol Radziner & Associates, Santa Monica, CA
CPI provided 14,000 SF of Pentaglas® 12 & 16 LiteWall™.

ID 27205 - Third & Pine Parking Garage, Seattle WA
Architect: Sienna Architecture, Portland, OR
CPI provided 24,000 SF of Pentaglas® 10 finished with Ice White Matte glazing to clad an existing 8-story open parking garage. The glazing system and use of reversed battens created an aesthetically pleasing flush look to compliment the heart of downtown Seattle.

ID 25776 - Equinox Health Club, Dallas, TX
Architect: Good Fulton & Farrell, Dallas, TX
CPI used 7,200 SF of Pentaglas® 10 finished with White Matte glazing and reversed battens to create a flush seamless look.
**Retrofit Systems for Overglazing, Replacement and Reglazing**

*Exciting and Intelligent Systems to Bring CPI’s Modern Technology to Yesterday’s Buildings*

Now there are simple and effective systems designed to replace or envelop dated or damaged daylighting systems. CPI retrofit systems can be used to:

- Eliminate leakage in old skylighting systems.
- Improve insulation in older single-glazed daylighting systems.
- Significantly reduce air infiltration in old glazing systems.
- Reclaim light that has been lost due to aging fiberglass systems.
- Improve security in old vertical and sloped systems.

*Overglaze – Enveloping Leaking Skylights or Vertical Glazing*

Pentaglas® systems can be designed to envelop leaking acrylic or glass systems. The source of the leakage is removed from the elements by floating a new skin over the existing structure and glazing. The new light-transmitting skin creates a complete and permanent waterproof membrane, ensuring a leakproof seal and an affordable solution.

*Replacement of Deteriorated Fiberglass Sandwich Panels*

**Before**

ID 14649 - University of Texas Pan AM, Edinburg, TX
Architect: Architect Mida, McAllen, TX
CPI used 34’ long panels of dry-glazed Quadwall® system to replace an old deteriorated glazing system and eliminate previous horizontal joints causing leakage.

**During**

**After**

*Replacement of Deteriorated Glass Monitor Skylights*

**Before**

ID 21392 - SAS Institute
Building R, Raleigh, NC
Architect: David Kane Architects, Raleigh, NC
This 90’ x 204’ translucent fiberglass Atrium skylight was leaking and yellowing despite its short existence in North Carolina weather. CPI’s long-term solution improved light levels, quality of light and appearance by providing a 4” panelized Quadwall® system without horizontal transverse connections from the sill to the ridge.

**After**

ID 2206 - Skokie CTA Shops, Chicago, IL
Architect: STV Architects, Chicago, IL
CPI overglazed an existing aged single-pane wire glass system consisting of 7 rows of glass monitors each 9’ tall x 200’ long.
Replacement of Failed Vertical Glass Systems

A retrofit bronze Pentaglas® glaze skylight measuring 20’ x 113’ was used by Meharry Medical College to replace a 20 year old skylight which was leaking and dark. The bronze Pentaglas® provides significantly more light than the previous dark bronze acrylic panels and the watertight design prevents future leaks.

Replacement of Deteriorated Acrylic/Plastic Skylights

ID 13242 - Prime Osborne Convention Ctr., Jacksonville, FL  Architect: Manausa Lewis & Dodson Architects, Tallahassee, FL  CPI replaced an old failed leaking glass skylight with a Quadwall® system and retrofitted the existing structure. Skinning the structure with one continuous panel system from the sill to the apex eliminated any transverse connections.

ID 3062 – Meharry Medical College, TN
Moody & Noland LTD, Inc. Architects

ID 9228 - Hazelwood East High School, St. Louis, MO  CPI provided a solution to two clusters of leaking acrylic skylights by creating a heat-bent ridge skylight over one flat area of the skylight clusters and a single slope skin system over the other existing skylight clusters.

Find us on the web at: www.cpidaylighting.com

CPI Daylighting Programs – For Free Catalogs Call 1-800-759-6985
Test Data and Technical Summary

Since CPI Pentaglas® and Quadwall® systems provide great design flexibility, test data shall be interpreted in the final configuration. Please consult our Technical Service Department for clarification on your specific design requirements. Test reports are available upon request.

Thermal and Light Performance

The following data is for combinations shown. Many others are available. Light transmission, color tints, and insulation levels may be provided to achieve other desired values.

Thermal and Light Performance

The following data is for combinations shown.

<table>
<thead>
<tr>
<th>Pentaglas® 12mm/0.47&quot; Panels</th>
<th>Quadwall® 70mm/2.75&quot; Panels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U</strong> factor per NFRC 100 = 0.48</td>
<td><strong>U</strong> factor per NFRC 100 = 0.24</td>
</tr>
<tr>
<td><strong>U</strong> per European Calc. = 0.32</td>
<td><strong>U</strong> per European Calc. = 0.17</td>
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</table>

<table>
<thead>
<tr>
<th>Color</th>
<th><strong>LT</strong>%</th>
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<tr>
<td>Clear</td>
<td>56%</td>
<td>0.55</td>
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<tr>
<td>Ice White</td>
<td>44%</td>
<td>0.43</td>
</tr>
<tr>
<td>White</td>
<td>3%</td>
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<tr>
<td>Green</td>
<td>19%</td>
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<tr>
<td>Blue</td>
<td>17%</td>
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<tr>
<td>Bronze</td>
<td>20%</td>
<td>0.18</td>
</tr>
<tr>
<td>Dk Reflective</td>
<td>20%</td>
<td>0.15</td>
</tr>
</tbody>
</table>

**Test Description**

1. **Flammability**
   - Self-Ignition: ASTM 1999-3
   - Smoke Density of Plastic: ASTM D-2043
   - Burning Extent: ASTM D-635
   - Interior Flame Spread and Smoke Development:
     - CAN/ULC-S102.4-M88
     - Exterior Class “A”:
       - Roof Construction—Optional: UL 790/UBC 32-7

2. **Weathering**
   - 10 Years Actual Florida Exposure Evaluation: ASTM E320 & E695
   - Weathering Evaluation: ASTM D4364-84

3. **Water Penetration**
   - ASTM E-331

4. **Air Infiltration**
   - ASTM D-283

5. **Impact and Cyclic Loading**
   - ASTM E-1994-02 & E-1886-97
   - ASTM E-822-81

6. **Accelerated Delamination**
   - ASTM C-336/94C

7. **Shading Coefficient**
   - ASTM/ASHRAE/NFRC

8. **Expansion/Contraction**
   - Linear thermal expansion: 0.0000375 in/in/°F

9. **Code Compliance**
   - ICC Evaluation: See ICC Reports #ER-4798 & #94160A
   - Other various local approvals available

10. **OSHA Compliance**
    - ASTM E-1910, 23 (e) (B)

11. **Impact Loading**
    - ASTM E-695-03

12. **Quality Standard**
    - SI ISO 9002

13. **Panel Sizes & Weights**
    - Weight: 0.5-1.5 lb./ft2 dependent upon final configuration

14. **UV Protection**
    - Pentaglas® glazing provides extruded UV protection on both sides of the panel. Does not require periodic re-coating to maintain performance.

15. **Warranty**
    - Danpalon® provides a 10-year limited warranty against loss of light, color, change, and penetration by hail as defined in the individual warranty. Details of limited warranty available upon request.

**Hurricane Endurance Designs**

Durable Pentaglas® special assemblies feature an innovative design that complies with the Florida Building Code for hurricane conditions including resistance of impact, cyclic winds, wind loads, and air/water infiltration. (Florida Approval FL6475 and Dade County NOA #05-1207.01)

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**CPI® Daylighting**

Custom Quadwall® assemblies conform to U.S. Government approvals:

- For statement of warranty, contact CPI Daylighting, Inc.

**CPI® Daylighting**

Year 1990

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Lake Forest, Illinois 60045
TEL (847) 816-1060
FAX (847) 816-0425

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CPI Representatives throughout the USA and internationally are ready to serve your daylighting needs. For immediate assistance from your local sales representative call 1-800-759-6985.