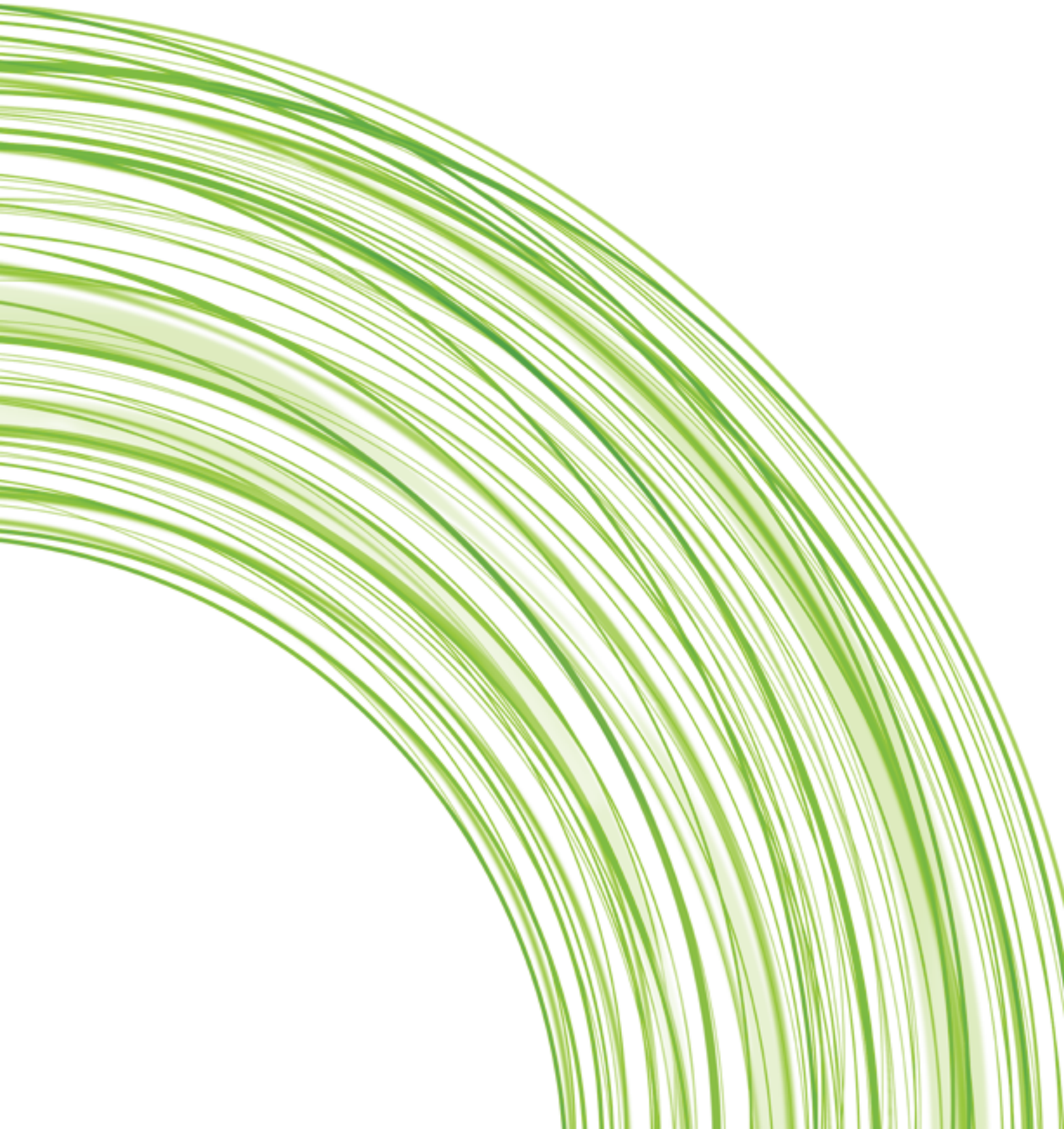
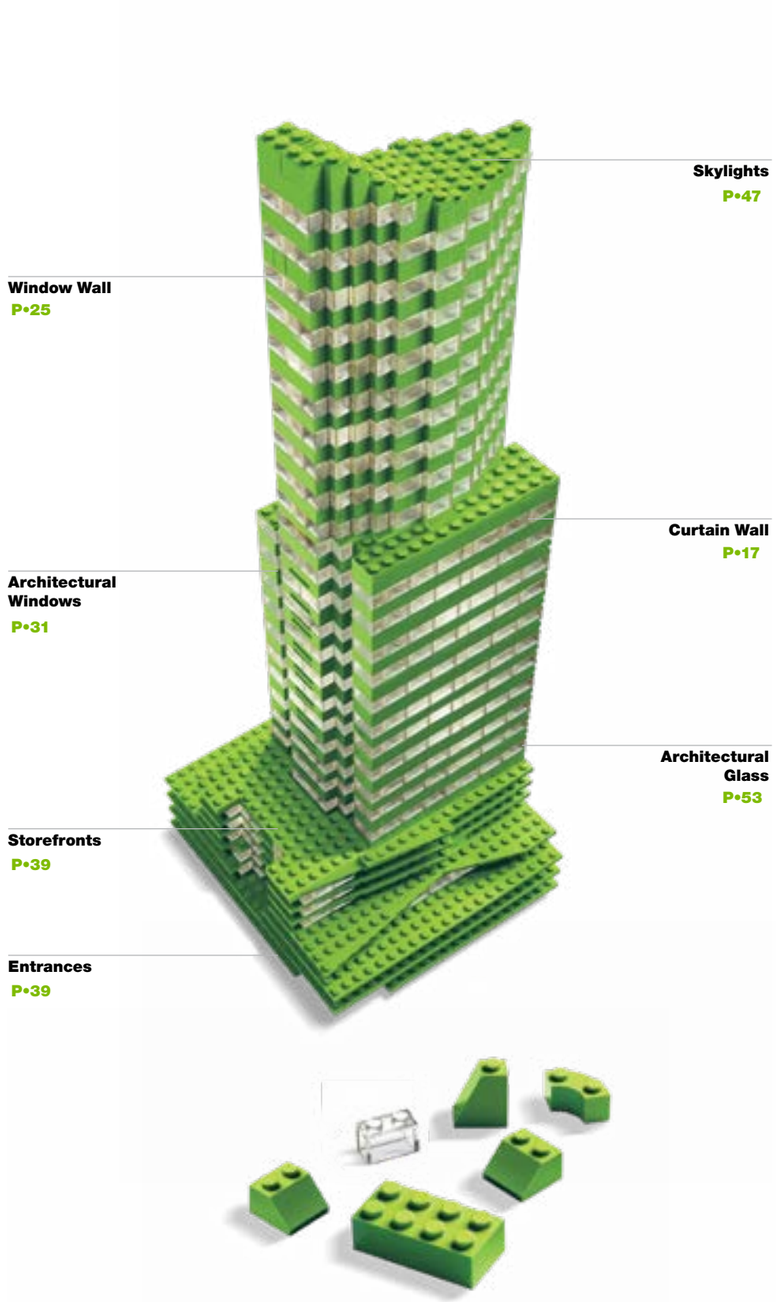
Oldcastle BuildingEnvelope®
A CRH COMPANY

glass | curtain wall | storefronts | windows | skylights | interiors



engineered to work together™

The concept of components engineered to work as one is not new and in fact, is quite simple, yet no other manufacturer does it. Why? The answer is also surprisingly simple—they can't. Sure, some try to cobble together solutions from disparate parts, but we are the only fully integrated supplier of building envelope products. And only we design, engineer, test and manufacture curtain wall and window wall, architectural windows, entrances and storefront systems, doors, skylights and architectural glass as a seamlessly integrated unit. Why? It makes buildings better. It saves you time. It reduces your risk. It just makes sense. There's only one Building Envelope Company™.



Stakeholders engineered to work together

Our approach is one of integration—integrated products, processes and stakeholders. The American Institute of Architects defines Integrated Project Delivery (IPD) as an approach that focuses on increased collaboration among all parties involved in a building's construction, and that's precisely how we approach the building envelope. We partner early in the design stages with each member of the customer chain to ensure there are no surprises. And because we have total manufacturing control, we not only control the supply chain, we are the supply chain—from raw materials through delivered final products, we are not reliant on other manufacturers.

We're not just making sustainable products—we're focusing on the future of energy

Like most manufacturers, we are focused on making our products more sustainable. Unlike most manufacturers, we are pushing the limits of technology, researching and creating new applications and platforms to calculate energy performance to foster the design and construction of better buildings. We are also studying the very future of energy through partnerships with leading universities and experts. Focusing on new developments today may lay the foundation for imagining change in the realms of energy production and consumption tomorrow.

Our **Leadership**

We believe imagination, ingenuity and vision can create environments conducive to innovation. The programs, conferences and cultural institutions we support encourage the kind of thought leadership that is an integral part of who we are and will continue to be.

THE FUTURE OF ENERGY

GSAPP

Design Futures Council

#ENERGY ISSUE

BUILDING DYNAMICS

In Pursuit of Architecture

Our **Tools**

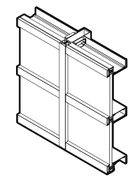
VistaVision® Simplifies estimating architectural glazing products and installation characteristics.

GlasSelect® Our patented tool makes specifying glass easier by matching performance criteria with the desired aesthetic solution.

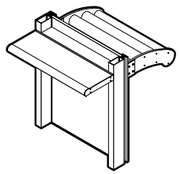
VistaVision® **GlasSelect®**

Our **Products**

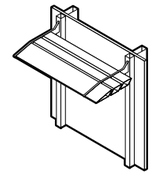
We are committed to developing products that are more than sustainable, products that also save energy. Our exclusive Reliance™ HTC meets the most stringent thermal performance requirements. Add to that, our Solar Shelf™ and Solar Eclipse™ Sun Controls also save on a building's energy consumption.



Reliance™ Curtain Wall



Solar Shelf™



Solar Eclipse™ Sunshade

Partnering leading with companies

ONE OF FORTUNE MAGAZINE'S
TOP 25 MOST RESPECTED COMPANIES:

Target Stores
North America

367,000	SQ FT Curtain Wall/ Monumental Storefronts
106,000	SQ FT Inset Panels
64,000	SQ FT Architectural Glass
188	Stores
152	Entrance Doors
15	Months

One Envelope

Awarded Target's
Vendor of the Year

ONE OF NORTH AMERICA'S LARGEST
BUILDING PROJECTS 2012-2014

ExxonMobil
Houston Campus

2,600,000 SQ FT Curtain Wall
1,600,000 SQ FT Architectural Glass
20,450 Sunshades
4,000 SQ FT Skylights
20 Structures
16 Buildings

One Envelope

Our Product Offerings

Curtain Wall

The Bow,
EnCana Headquarters

Location: Calgary, AB
Architect: Foster + Partners
Custom-engineered Curtain Wall and High-performance Architectural Glass

Few curtain wall manufacturers can showcase a range of custom and standard curtain wall products and projects as varied as we can at Oldcastle BuildingEnvelope®. We are an unquestioned leader at pushing the limits of traditional curtain wall systems. That's why visionary architects designing landmark, custom projects, like The Bow, EnCana Headquarters, designed by Foster + Partners; Cowboys Stadium designed by HKS, Inc.; Frank Gehry's dramatic Art Gallery of Ontario and many more, rely on us.

And while our custom capabilities are extensive, we offer a full range of standard curtain wall products, including industry leading thermal products like our Reliance™ HTC, which meets the most stringent thermal performance demands. Add hurricane and blast-resistant models to our product profile and you have the most comprehensive curtain wall offering available anywhere.

Aura at College Park
Location: Toronto, ON
Architect: Graziani + Corazza
Unitized Curtain Wall,
Architectural Glass

Nemours/Alfred I. duPont Hospital for Children
Location: Wilmington, DE
Architect: FKP Architects
Custom-engineered Curtain Wall

William Jones College Preparatory High School
Location: Chicago, IL
Architect: Perkins + Will
Custom-engineered Curtain Wall and Architectural Windows

Reliance™

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 15 PSF per ASTM E331 and AAMA 501.1

U-Value: Down to 0.34

CRF Frame: Up to 78

Features and Options

- 2-1/2" sightline with a variety of system depths and glazing infill options
- Thermally broken, zone-glazed system
- Optional FRP pressure plate for increased thermal performance
- Captured and SSG vertical mullions

Reliance™-LT

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 12 PSF per ASTM E331, AAMA 501.1 and ASTM E547

U-Value: Down to 0.34

CRF Frame: Up to 78

Features and Options

- 2" sightline with multiple system depths and glazing infill options
- Thermally broken, zone-glazed system
- Optional polyamide pressure plate for increased thermal performance
- Captured and SSG vertical mullions

Reliance™-TC

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 15 PSF per ASTM E331 and AAMA 501.1

U-Value: Down to 0.30

CRF Frame: Up to 83

Features and Options

- 2-1/2" sightline with multiple system depths and glazing infill options
- Exceptional thermal performance through use of polyamide insulating strips and continuous EPDM push-in isolator
- Optional FRP pressure plate for maximized thermal performance
- Available in 2 configurations:
  - Type I: Thermal composite verticals w/ standard horizontals
  - Type II: Thermal composite verticals and horizontals w/ pressure plate assembly

Reliance™-TC IG

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

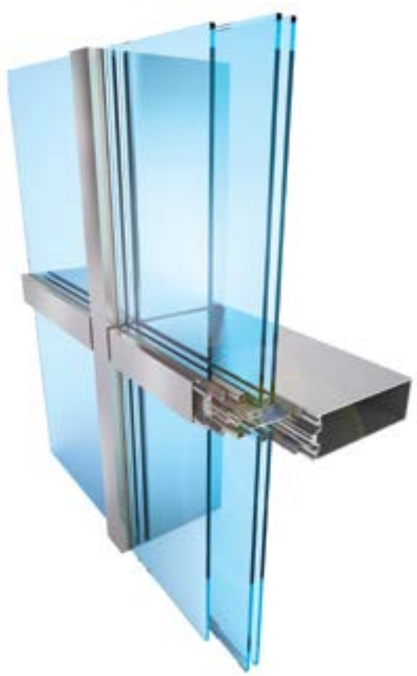
Water: 15 PSF per ASTM E331 and AAMA 501.1

U-Value: Down to 0.32

CRF Frame: Up to 80

Features and Options

- 2-1/2" sightline with multiple system depths and glazing infill options
- Inside-glazed system
- Exceptional thermal performance through use of polyamide insulating strips throughout



Reliance™-HTC

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 15 PSF per ASTM E331 and AAMA 501.1

U-Value: Down to 0.21

CRF Frame: Up to 82

Features and Options

- 2-1/2" sightline with multiple system depths
- Top-of-range thermal performance through use of polyamide insulating strips and continuous EPDM push-in isolator
- Captured and SSG vertical mullions
- Available with typical infill options of 1-3/4" or 2" insulated triple-glazed units

Reliance™ Unit Wall

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 15 PSF per ASTM E331 and AAMA 501.1

U-Value: Down to 0.34

CRF Frame: Up to 74

Features and Options

- 2-1/2" sightline with multiple system depths and glazing infill options
- Screw spline system offered in stock lengths, fabricated KD or fully assembled and glazed
- Utilizes starter sill and stack horizontal for ease of installation
- Available in captured and non-captured 4-sided structurally glazed configurations
- Versatile design allows for curtain wall, window wall and punched opening applications

Reliance™ Cassette

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

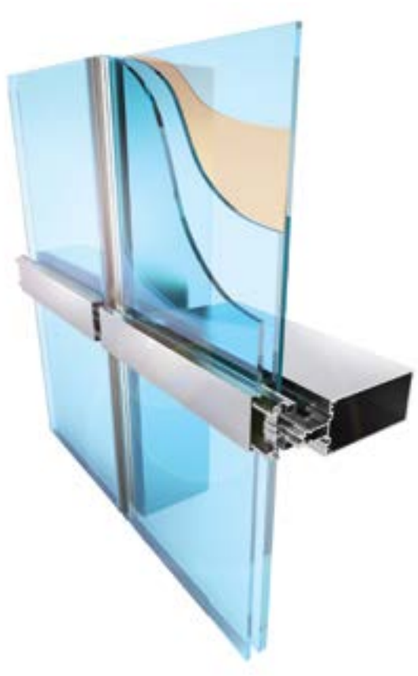
Water: 15 PSF per ASTM E331 and 20 PSF (88 mph) per AAMA 501.1

U-Value: Down to 0.30

CRF Frame: Up to 85

Features and Options

- 2-1/2" sightline with multiple system depths and glazing infill options
- Either structural silicone or 3M™ VHB™ tape is used to shop glaze infill onto cassette frames that are then taken to the field and installed onto structural grid of Reliance™ or Reliance™-SS curtain wall framing
- Can be used either in new construction or retrofit onto existing Reliance™/ Reliance™-SS installations
- 4-sided structurally glazed system that can also accommodate exterior face caps to provide a unique architectural aesthetic or transition to a standard Reliance™/ Reliance™-SS installation



Reliance™ StormMax®

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per TAS 202 & ASTM E283

Water: 15 PSF per TAS 202 & ASTM E331

Structural Load: ± 100 PSF per TAS 202 and ASTM E330

Large & Small Missile: ± 100 PSF per TAS 201, TAS 203 and ASTM E1886

U-Value: Down to 0.44

CRF Frame: Up to 66

Features and Options

- 2-1/2" sightline and 7-1/2" depth with 1-5/16" insulating laminated glazing infill
- Florida Building Code and Texas Department of Insurance approvals
- Dry or wet glazed options
- Thermally broken with continuous EPDM push-in isolator
- Captured and SSG vertical mullions

Window Wall

The Cooper Union

Location: New York, NY
Architect: Morphosis Architects
Architectural Windows and Window Wall

After engineering and manufacturing millions of square feet of our Window Wall, it's clear that Oldcastle BuildingEnvelope® is an unquestioned leader in driving window wall technology. Exclusive designs and technological advancements, like our exclusive energy and performance calculations, visualization and full-scale mock-ups, set the industry standard.

Our unique ability to offer both custom-engineered and standard solutions is unparalleled in our industry. Many of the nation's finest hotels, luxury high-rises and numerous landmark properties feature our window walls.

24 Waterway
Location: The Woodlands, TX
Architect: Gensler and Elkus-Manfredi Architects
Custom-engineered
Window Wall

Iowa State University Recreation Facilities
Location: Ames, IA
Architect: RDg Planning & Design
Thermal Window Wall

Camden South Capitol
Location: Washington, DC
Architect: WDG
Window Wall

Reliance™ Window Wall

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 15 PSF per ASTM E331 and AAMA 501.1

U-Value: Down to 0.35

CRF Frame: Up to 70

Features and Options

- 2-1/2" vertical sightline, 2-1/4" horizontal sightline offered with a variety of infill options
- Factory assembled, sealed and glazed using 3M™ VHB™ tape
- Enhanced thermal performance with reinforced polyamide struts in head and sill cans
- Optional integrated slab edge cover
- Installed from floor slab, no staging required

PDR-225

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 12 PSF per ASTM E331 and AAMA 501.1

U-Value: Down to 0.34

CRF Frame: Up to 70

Features and Options

- 2-1/4" sightline with a variety of infill options
- Factory assembled and sealed, field glazed
- Oversize (3/8") poured-and-debridged thermal break for enhanced performance
- Optional integrated slab edge cover
- Can be inside or outside glazed for maximum versatility

Signature Series SGHT

Performance

Air: <0.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283 @ Fixed

<0.10 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283 @ Operators

Water: 15 PSF per ASTM E331 and AAMA 501.1

U-Value: Down to 0.35

CRF Frame: Up to 72

Features and Options

- 2-1/2" vertical sightline and 6" depth offering a variety of 1" infill options
- Factory assembled, sealed and glazed using 3M™ VHB™ tape or structural silicone
- Operable vents are integrated directly into framing system
- Enhanced thermal performance with reinforced polyamide struts in head and sill cans
- Optional integrated slab edge cover

RW-5000 StormMax®

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per TAS 202 & ASTM E283

Water: 15 PSF per TAS 202 & ASTM E331

Structural Load: +70/-80 PSF per TAS 202 and ASTM E330

Large & Small Missile: +70/-80 PSF per TAS 201, TAS 203 and ASTM E1886

Features and Options

- 2-1/2" sightline and 5" depth accepting 9/16" laminated glazing
- Florida Building Code approvals
- Structural silicone glazed and screw spline assembly
- Panelized/pre-glazed option available
- Weeped and baffled, no sill flashing required

Architectural Windows

100 11th Ave

Location: New York, NY
Architect: Ateliers Jean Nouvel & Beyer Blinder Belle
Architectural Windows, Architectural Glass and Entrances

Oldcastle BuildingEnvelope® is a leader in the design, engineering and manufacturing of both custom and standard architectural and heavy commercial windows. Our ability to translate the most complex window designs leveraging our unique engineering and manufacturing capabilities is unequaled. In fact, on a recent project, Oldcastle BuildingEnvelope® was brought in to design, engineer and manufacture custom windows when another manufacturer could not execute.

That's why our windows grace some of America's most prominent and discerning commercial, institutional, luxury high-rise residential, even historic preservation applications. From Gehry's famous MIT and 8 Spruce Street to Robert A.M. Stern's Fifteen Central Park West and Perot Museum of Nature and Science, designed by Pritzker Award winning architect Thom Mayne. And our collection of standard windows is equally impressive, including thermal, hurricane and blast-resistant models.

MassArt
Location: Boston, MA
Architect: ADD, Inc.
Architectural Windows
and Architectural Glass

Silver Towers
Location: New York, NY
Architect: Costas Kondylis
& Partners
Architectural Windows

8 Spruce Street
Location: New York, NY
Architect: Gehry Partners, LLP
Architectural Windows

Signature Series 12PL–14PL–16PL

Performance

Air Infiltration: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Static Water: 12 PSF per ASTM E331

Deflection Load: ±70 PSF per ASTM E330

Structural Load: ±105 PSF per ASTM E331

Features and Options

- Frame depth: 2-1/2", 3-1/2" and 4-1/2"
- Tubular sash and meeting rails
- Overlap sash to frame design
- Poured-and-debridged thermal break for enhanced performance

Signature Series 3-1/4" Lap

Performance

Air Infiltration: <0.10 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Static Water: 15 PSF per ASTM E331

Deflection Load: ±100 PSF per ASTM E330

Structural Load: ±150 PSF per ASTM E331

Features and Options

- Frame depth: 3-1/4"
- Tubular sash and meeting rails
- Overlap sash to frame design
- Polyamide thermal break for enhanced performance

Signature Series 3375

Performance

Air Infiltration: <0.10 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Static Water: 15 PSF per ASTM E331

Deflection Load: ±100 PSF per ASTM E330

Structural Load: ±150 PSF per ASTM E331

Features and Options

- Frame depth: 3-11/16"
- Tubular sash and meeting rails
- Overlap sash to frame design
- Polyamide thermal break for enhanced performance

Signature Series 5" Lap

Performance

Air Infiltration: <0.10 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Static Water: 15 PSF per ASTM E331

Deflection Load: ±100 PSF per ASTM E330

Structural Load: ±150 PSF per ASTM E331

Features and Options

- Frame depth: 5"
- Tubular sash and meeting rails
- Overlap sash to frame design
- Polyamide thermal break for enhanced performance

Potawatomi Hotel

Location: Milwaukee, WI
Architect: Cunningham Group
Architectural Windows

Signature Series ZeroSightline-HT

Performance

Air Infiltration: <0.10 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Static Water: 15 PSF per ASTM E331

Deflection Load: ±110 PSF per ASTM E330

Structural Load: ±165 PSF per ASTM E331

Features and Options

- Frame depth: 3-3/4"
- Tubular sash
- Curtain wall insert and flat back perimeter frame
- Customer polymer thermal break for enhanced performance

Pinnacle Series 66P

Performance

Air Infiltration: <0.10 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Static Water: 15 PSF per ASTM E331

Deflection Load: ±100 PSF per ASTM E330

Structural Load: ±150 PSF per ASTM E331

Features and Options

- Frame depth: 5"
- Tubular sash
- Multiple security locks
- 5/8" or 1" blinds
- Poured-and-debridged thermal break for enhanced performance

For the most up-to-date product information please visit obe.com

Entrances & Storefronts

Fort Belvoir Community Hospital

Location: Fairfax County, VA
Architect: HDR/Dewberry
Architectural Windows, Architectural Glass and Entrances

Oldcastle BuildingEnvelope® is a market leader in standard and custom storefront and entrance systems.We design, engineer and manufacture fully integrated all-glass and aluminum entrance doors and storefronts. With the largest national footprint of any manufacturer, we are wherever you and your projects are.

From Tampa to Tahoe, our custom-engineered storefronts and entrances make a great first impression with some of America's most sophisticated entrances. Our extensive industry experience includes hospitality, retail, education, government, healthcare, military, museums, airports and more.

Perot Museum of Nature and Science

Location: Dallas, TX
Architect: Morphosis Architects
Thermal Building Envelope

Wolfe Center for the Collaborative Arts

Location: Bowling Green, OH
Architect: Snøhetta
All-Glass Entrances, Laminated Glass and Custom Silk-screened insulating glass

Infiniti

Location: Pittsburgh, PA
Architect: Mack, Scogin, Merrill, Elam Architects
Architectural Glass and Entrances

Series 3000 Thermal MultiPlane

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 10 PSF per ASTM E331

U-Value: Down to 0.32

CRF Frame: Up to 69

Features and Options

- 2" x 4-1/2" system dimensions with 1" typical infill. Adaptor and gasket combinations can accommodate a variety of other infill depths
- Available in front set, center set, back set, and multi-set configurations
- SSG vertical option is available with front set system using patented funnel bridge for water management
- System is thermally broken using poured-and-debridged polyurethane breaks
- Inside or outside glazed
- Shear block or screw spline assembly

Series 6000 Thermal MultiPlane

Performance

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per ASTM E283

Water: 10 PSF per ASTM E331

U-Value: Down to 0.34

CRF Frame: Up to 73

Features and Options

- 2" x 6" system dimensions with 1" typical infill. Adaptor and gasket combinations can accommodate a variety of other infill depths
- Available in front set and center set configurations
- SSG vertical option is available with front set system using patented funnel bridge for water management
- System is thermally broken using poured-and-debridged polyurethane breaks
- Inside or outside glazed
- Shear block or screw spline assembly

Mall Front: Sliding

Performance

Air Infiltration: Not to exceed 0.06 cubic feet per minute per square foot of wall area when tested at 6.24 PSF per ASTM E283

Features and Options

- Include aluminum stile and rail and all-glass models
- Single direction or bi-parting multi-track
- Single-track 90-degree or parallel stacking options

FG-5000 StormMax®

Performance

Wet Glaze

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per TAS 202 & ASTM E283

Water: 15 PSF per TAS 202 & ASTM E331

Structural Load: ± 90 PSF per TAS 202 and ASTM E330

Large & Small Missile: ± 90 PSF per TAS 201, TAS 203 and ASTM E1886/E1996

Dry Glaze

Air: <.06 CFM/Sq. Ft. @ 6.24 PSF per TAS 202 & ASTM E283

Water: 10 PSF per TAS 202 & ASTM E331

Structural Load: +60/-70 PSF per TAS 202 and ASTM E330

Large & Small Missile: +60/-70 PSF per TAS 201, TAS 203 and ASTM E1886/E1996

Features and Options

- 2-1/2" x 5" system dimensions accepting 9/16" laminated glazing
- Florida Building Code and Miami/Dade County approvals
- Screw spline assembly
- Dry glazed option available (large missile)
- Pre-glazed option available

Standard NS-212/MS-375/WS-500 Aluminum Entrance

Performance

Tested for air infiltration per ASTM E283

Thermally tested per AAMA1503

Tested for structural load per ASTM E330

Tested for forced entry per AAMA 1303

Features and Options

- Available in narrow, medium and wide stile versions
- Accommodates a wide variety of hardware
- Accepts 1/4", 3/8", 5/8" and 1" glazing infill
- Available with one-piece bottom rails ranging in height from 4" to 10"
- Adaptable to meet local building codes
- Limited lifetime warranty

MS-375TC/WS-500TC Thermal Composite Entrance

Performance

Tested for air infiltration per ASTM E283

Thermally tested per AAMA1503

Tested for structural load per ASTM E330

Tested for forced entry per AAMA 1304

Features and Options

- Available in medium and wide stile versions
- All door and frame members are thermally broken utilizing polyamide insulating strips
- Accommodates a wide variety of standard hardware
- Accepts 1" glazing infill only
- 8" bottom rail is standard, 10" option available
- Dual weathering at frame to door connections

Entrance Door: All Glass

Configurations

P Style
Continuous top and bottom rails

BP Style
Continuous bottom rail with top pivot patch fitting

A Style
Patch fittings at pivot corners

F Style
Patch fittings at top and bottom and a lock patch at the leading edge of the door

Features and Options

- Engineered to allow extraordinary flexibility

Terrace Door: Swing

Performance

AAMA: AW-50 to 80 (single leaf)

Air Infiltration: < 0.1 CFM/SQ FT

Water Rating: 12 PSF per ASTM E331

Cycle Test: 25,000 cycles

Features and Options

- High-performance hinged, glazed doors
- Custom-manufactured in both single and paired configurations
- Features clean, architectural lines
- Smooth and consistent operation in both inward and outward swings

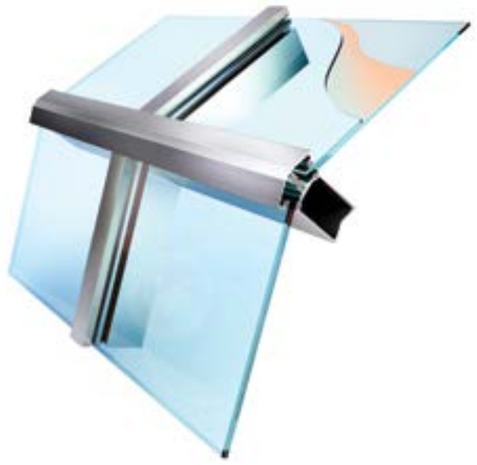
Skylights

Gerald R. Ford International Airport

Location: Grand Rapids, MI
Architect: Gresham, Smith and Partners
Custom-engineered Skylights

No matter the size or complexity of your skylight design, we can make it a beautiful reality. From pre-engineered to custom skylights and everything in between, Oldcastle BuildingEnvelope® offers the most comprehensive line of highly engineered architectural skylights in the industry. That's why Hnedak Bobo Group, the architect of Gaylord Texan Hotel & Convention Center, called on us.

In addition to our unmatched custom-engineering capabilities, we offer a full range of pre-engineered skylights including the Versalite™ skylight, which ships assembled, pre-glazed and ready to install. And our proprietary high-performance BMS-3000 skylight is thermally improved through the use of our patented glazing clip.



Custom: BMS-3000

Performance

Air Infiltration per ASTM E-283:
< 0.06 CFM/Sq. Ft. @ 6.24 PSF

Static Water Infiltration per ASTM E-331:
No uncontrolled leakage at 15 PSF

Features and Options

- Flush integral gutter system of tubular framing members; 2-1/2" sight line
- Stepped guttering system; positive stop controls lip-seal pressure at edges of glass units
- Suitable for various pitches and custom applications

BMS-3000 Glasslite Skin System

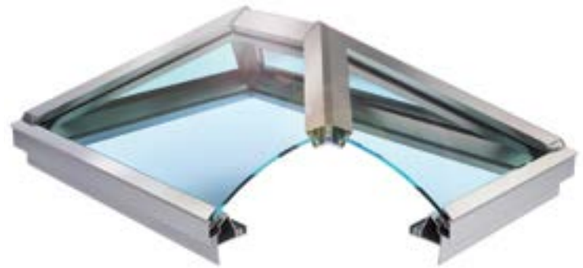
Performance

Air Infiltration per ASTM E283:
<.06 CFM/Sq. Ft. @ 6.24 PSF

Static Water Infiltration per ASTM E331:
No uncontrolled leakage @ 15 PSF

Features and Options

Low profile system ideal for attaching directly to an existing structural framing system, such as when a canopy skylight might be desired to cover a steel or wood trellis



Pre-Engineered: Versalite™

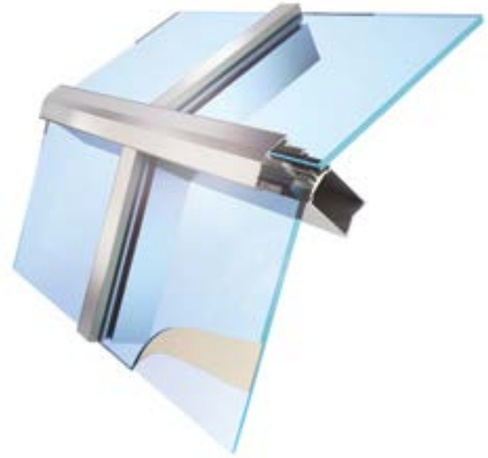
Performance

Structural Capacity: 40 PSF positive and negative per ASTM E 330

Air Leakage: 0.1 at 6.24 PSF per ASTM E 283

Features and Options

- Ships assembled and glazed (limits apply)
- Pyramids available up to 8' x 8'
- Sizes: Hipped and Vertical End Ridges up to 8' wide x unlimited length
- Available in Pyramid, Hipped Ridge, Vertical End Ridge
- System accepts both Insulating and Laminated Glass



Metal Framed Skylights: StormMax® BMS-3000

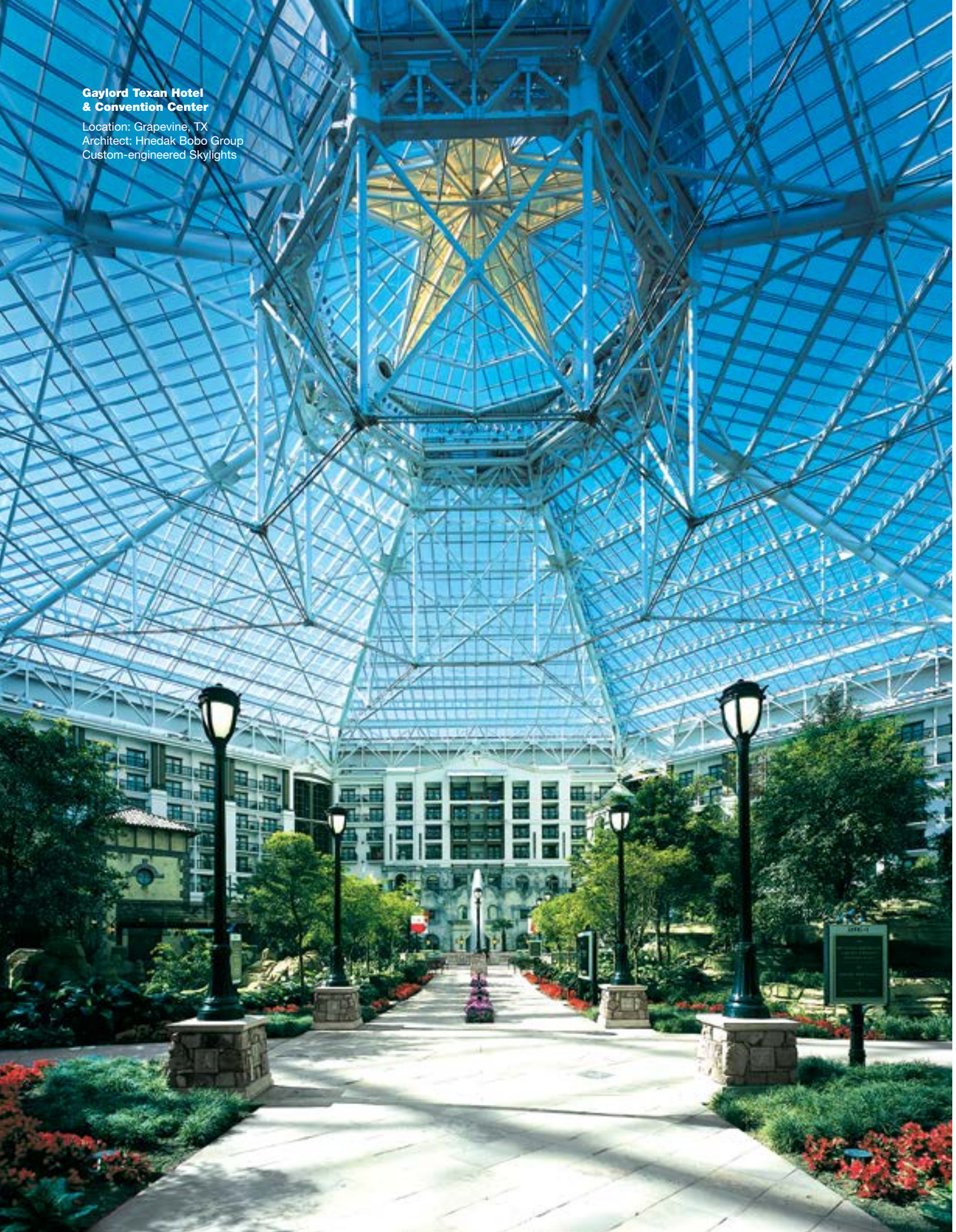
Performance

Air Infiltration per ASTM E 283:
< 0.06 CFM/Sq. Ft. @ 6.24 PSF

Static Water Infiltration per ASTM E 331:
No uncontrolled leakage at 12 PSF

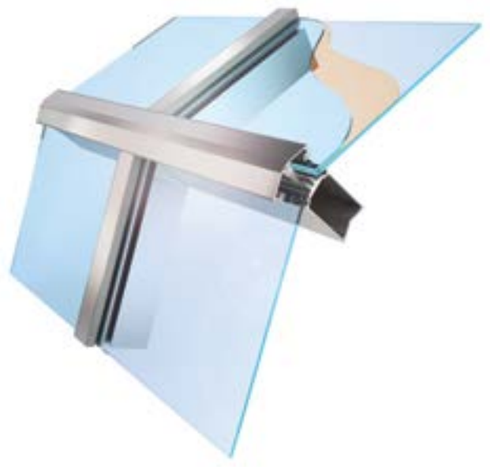
Features and Options

- Flush integral gutter system of tubular framing members
- “HR” meets ASTM wind-borne debris impact requirements of the IBC and certain NOA criteria as issued by Miami-Dade County
- “HR” accommodates 9/16" laminated and select insulating glass units
- “SG” offers a full range of framing members



Gaylord Texan Hotel & Convention Center

Location: Grapevine, TX
Architect: Hnedak Bobo Group
Custom-engineered Skylights



Metal Framed Skylights: BlastMax® BMS-3000

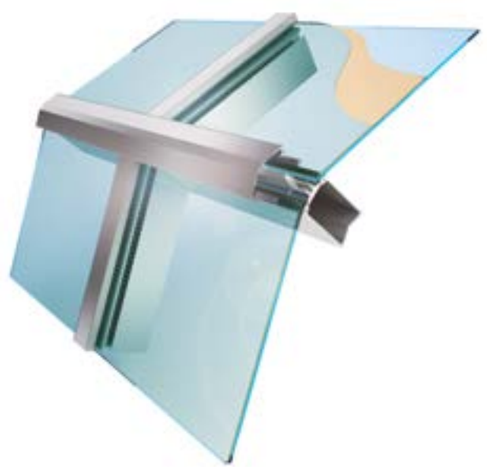
Performance

Air Infiltration per ASTM E 283:
< 0.06 CFM/Sq. Ft. @ 6.24 PSF

Static Water Infiltration per ASTM E 331:
No uncontrolled leakage at 15 PSF

Features and Options

- Flush integral gutter system of tubular framing members
- Stepped guttering system
- Positive-stop controls lip-seal pressure
- Accommodates 1-5/16" insulating glass units
- Meets ASTM, GSA and DoD requirements



Metal Framed Skylights: BMS-3000 BIPV and EC

Performance

Air Infiltration per ASTM E 283:
< 0.06 CFM/Sq. Ft. @ 6.24 PSF

Static Water Infiltration per ASTM E 331:
No uncontrolled leakage at 12 PSF

Features and Options

- Flush integral gutter system of tubular framing members
- Stepped guttering system
- Positive-stop controls lip-seal pressure at edges of glass units
- Internal wire management technology for seamless integration of glass and skylight technology

For the most up-to-date product information please visit obe.com

Architectural Glass

RBC Centre

Location: Toronto, ON
Architect: Kohn Pedersen Fox Associates
Custom-engineered Curtain Wall and Architectural Glass

We are North America's leading supplier of architectural glass with the most comprehensive portfolio of products available. Our exclusive high-performance products include StormGlass™ hurricane-resistant glass and BlastWall®, our patented, energy-absorbing blast-resistant wall system. We also offer highly visual design products such as Stackwall® structural glass, i-Glass® decorative glass and point-supported structural glass for dramatic all-glass looks. In addition, our GlasSelect® online specification tool ensures that you get the architectural glass look you want with the critical performance you need.

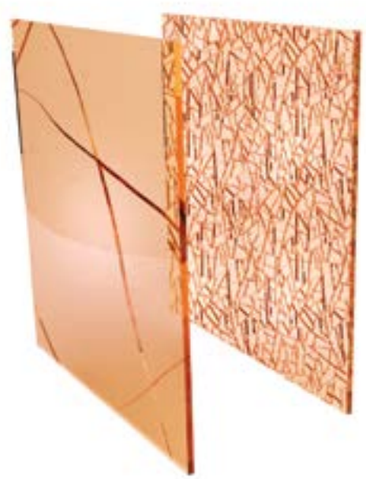
Emerson College
Location: Los Angeles, CA
Architect: Morphosis Architects
Architectural Glass

Rutgers Business School
Location: Piscataway, NJ
Architect: TEN Arquitectos
Architectural Glass

Bayer U.S. Headquarters
Location: Whippany, NJ
Architect: Ka
Architectural Glass

Energy Efficient: Insulating Glass

By combining Low-E coatings, standard and high-performance tinted glasses, reflective coatings, silk-screened patterns, laminated glass products and more, a wide variety of insulating glass configurations are available to satisfy a range of performance and aesthetic requirements. Insulating Glass units can be designed to reduce heat loss and solar heat gain entering the building, with a minimal reduction of visible light transmittance.



Heat-strengthened & Tempered

Heat-treated Product

Heat-strengthened

Strength vs. Annealed: Approx. 2x

Specifications/Standards: ASTM C1048

Product Attributes: Increased resistance to thermal and wind loads

Fully Tempered

Strength vs. Annealed: Approx. 4x

Specifications/Standards: ASTM C1048, CPSC 16 CFR 1201, ANSI Z97.1, CAN/CGSB-12.1

Product Attributes: Breaks into small particles, meeting safety glazing requirements

Decorative Glass: i-Glass®

i-Glass® combines the long term durability of ceramic inks with the versatility of digital printing directly onto the glass substrate to create endless possibilities in the design of interior elements and building facades.

Specifications

Applications: Interior, Exterior Glass

Minimum Size: 12"x 12"

Maximum Size: 96"x 144"

Glass Thickness Range: 1/8" - 1/2"

Print Resolution: 360 dpi

File Formats: PDF, PS, AI, EPS, TIFF, BMP and JPEG

Decorative Glass: Silk-screened & Spandrel

Silk-Screened Applications

Silk-screened glass can have transparent, translucent or opaque patterns for applications including glass doors, partitions, handrails, glass ceilings, elevator walls, bath enclosures, sneeze guards, curtain walls, canopies and skylights.

Spandrel Applications

Spandrel glass can be installed monolithically or in IG units as part of commercial fixed windows, curtain walls and storefronts. Spandrel glass should not be used in vision areas.

Structural Glass: Stackwall®

Capabilities

For a floor-loaded system up to 40 ft high or a suspended-fin system for taller applications and seismic loading conditions. Glass plates are joined to the fins with metal patch or “spider” fittings, and structural silicone. Metal framing (revealed or recessed) is used at the perimeter only.

Stackwall® uses structural glass mullions (fins) to provide unobstructed views. Various insulating glass make-ups can be used to maximize performance.

Structural Glass: Finwall®

Capabilities

For openings < 16 ft tall, exterior flush glazed wall uses interior glass fins (not metal) with monolithic, laminated, or insulating glass unit facades. Height limitations will vary according to glass type.

Typical

Segmented

Structural Glass: Point-support

Capabilities

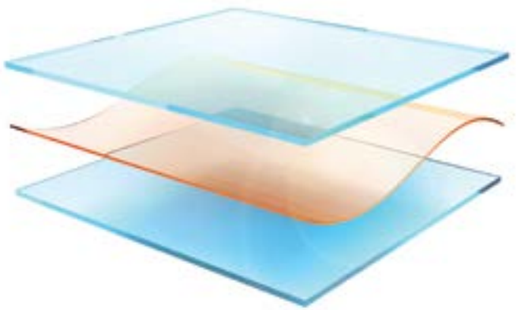
Oldcastle BuildingEnvelope® will supply point-supported glass for vertical, horizontal and sloped glazing applications as engineered systems. The fittings can be designed to mount to a structural steel, cable or rod substructure by others. Point-supported systems can also be designed to work with the Stackwall® glass fin system.

Structural Glass: Specialty Systems

Capabilities

Oldcastle BuildingEnvelope® has extensive experience in the design of structural glass systems. Custom design assistance is available for structural glass applications according to project development needs.

All glass entrance systems, insulating glass, laminated glass or monolithic glass can be incorporated into custom designs. Additionally, Oldcastle BuildingEnvelope® can engineer and supply the steel backup structure for many point-supported glass applications.



Hurricane-resistant: StormGlass™

Product Configuration

Outboard Lite	1/8"	3/16"	1/4"
Interlayer	0.075"	0.075"	0.075"
Inboard Lite	1/8"	3/16"	1/4"
Min. Thickness	0.31"	0.44"	0.51"
Average Thickness	0.33"	0.46"	0.54"
Max. Thickness	0.35"	0.48"	0.57"
Weight lbs/ft²	3.7	5.4	6.5

Sound Control

Product Configuration

			Laminated IG	
Glass type	IG	Laminated	Single	Double
Outboard Lite				
Glass	1/4"	1/4"	1/8"	1/8"
PVB	—	0.060"	0.030"	0.030"
Glass	—	1/4"	1/8"	1/8"
Air Space	1/2"	—	1/2"	1/2"
Inboard Lite				
Glass	1/4"	—	1/4"	1/8"
PVB	—	—	—	0.030"
Glass	—	—	—	1/8"
STC	35	39	39	42
OITC	28	34	31	33

Specialty Glass: Ionoplast

Product Configuration

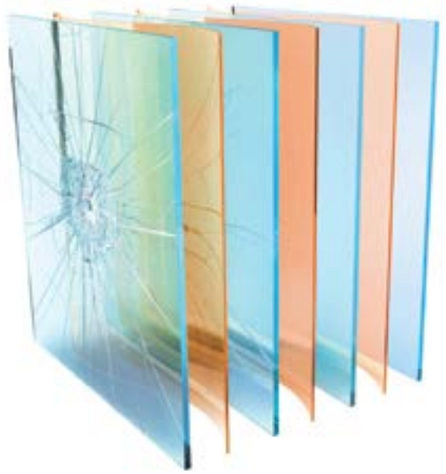
Nom. Thickness	1/2"	9/16"	19/32"
Construction	Lami	Lami	Lami
Glass	1/4"	1/4"	1/4"
Ionoplast	0.035"	0.060"	0.090"
Glass	1/4"	1/4"	1/4"
Weight lbs/ft²	6.3	6.4	6.6

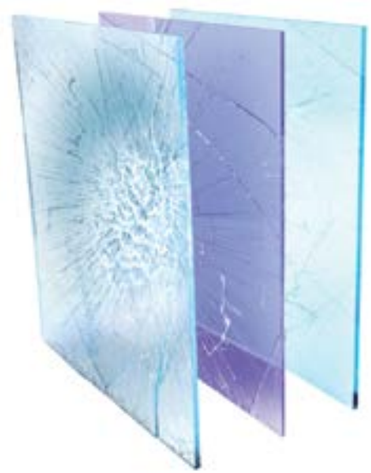
Overhead Glazing

Product Configuration

Nom. Thickness	9/16"	1-3/16"	1-3/16"
Construction	Lami	Lami IG	Lami IG
Outboard Lite	—	1/4" FT(1)	1/4" FT
Air Space	—	1/2"	1/2"
Inboard Lite			
Glass	1/4" HS(2)	3/16" HS	1/4" HS
PVB	0.060"	0.060"	0.060"
Glass	1/4" HS	3/16" HS	1/4" HS
Weight lbs/ft²	6.4	8.4	9.5

(1) FT – Fully Tempered **(2)** HS – Heat-strengthened





Bullet-resistant: ArmorResist®

A Selection of Security Laminates for Use in Bullet-resistant Applications

Model#	UL 752	Thickness	Weight	Assembly
211000	1	1-3/16"	14.7 lbs/ft²	AGL(1)
212000	2	1-1/2"	19.3 lbs/ft²	AGL
213000	3	1-3/4"	24.2 lbs/ft²	AGL
214000	4	2"	25.8 lbs/ft²	AGL
215000	5	2"	25.8 lbs/ft²	AGL
216000	6	1-13/16"	22.6 lbs/ft²	AGL

Max. Weight is 500 for all models **(1)** All glass laminate

Bullet-resistant: ArmorResist® Plus

A Selection of Security Laminates for Use in Bullet-resistant Applications

Model#	UL 752	Thickness	Weight	Assembly
221000	1	0.81"	8.4 lbs/ft²	GP(2)
222000	2	1.03"	11.2 lbs/ft²	GP
223000	3	1.22"	13.5 lbs/ft²	GP
224200	4	1.22"	13.5 lbs/ft²	GP
225000	5	1.28"	13.8 lbs/ft²	GP
226000	6	1.04"	9.8 lbs/ft²	GP
227100	7	1.64"	18.5 lbs/ft²	GP
228000	7	2.17"	25.0 lbs/ft²	GP

Max. Size is 60" x 96" for all models **(2)** Glass with exposed polycarbonate

Forced-entry: ArmorProtect® Plus

A Selection of Security Laminates for Use in Forced-entry Applications

Model#	121000	121100	121200	122000	123200
HPW-TP-500					
FE(3)	1	1	1	2	2
BR(4)	A	A	B	B	B
WMFL(5)	—	—	—	3	2
Thickness					
in	7/16	9/16	11/16	13/16	15/16
Weight lbs/ft²	4.6	5.4	6.2	6.4	7.2
Assembly	GCP(6)	GCP	GCP	GCP	GCP

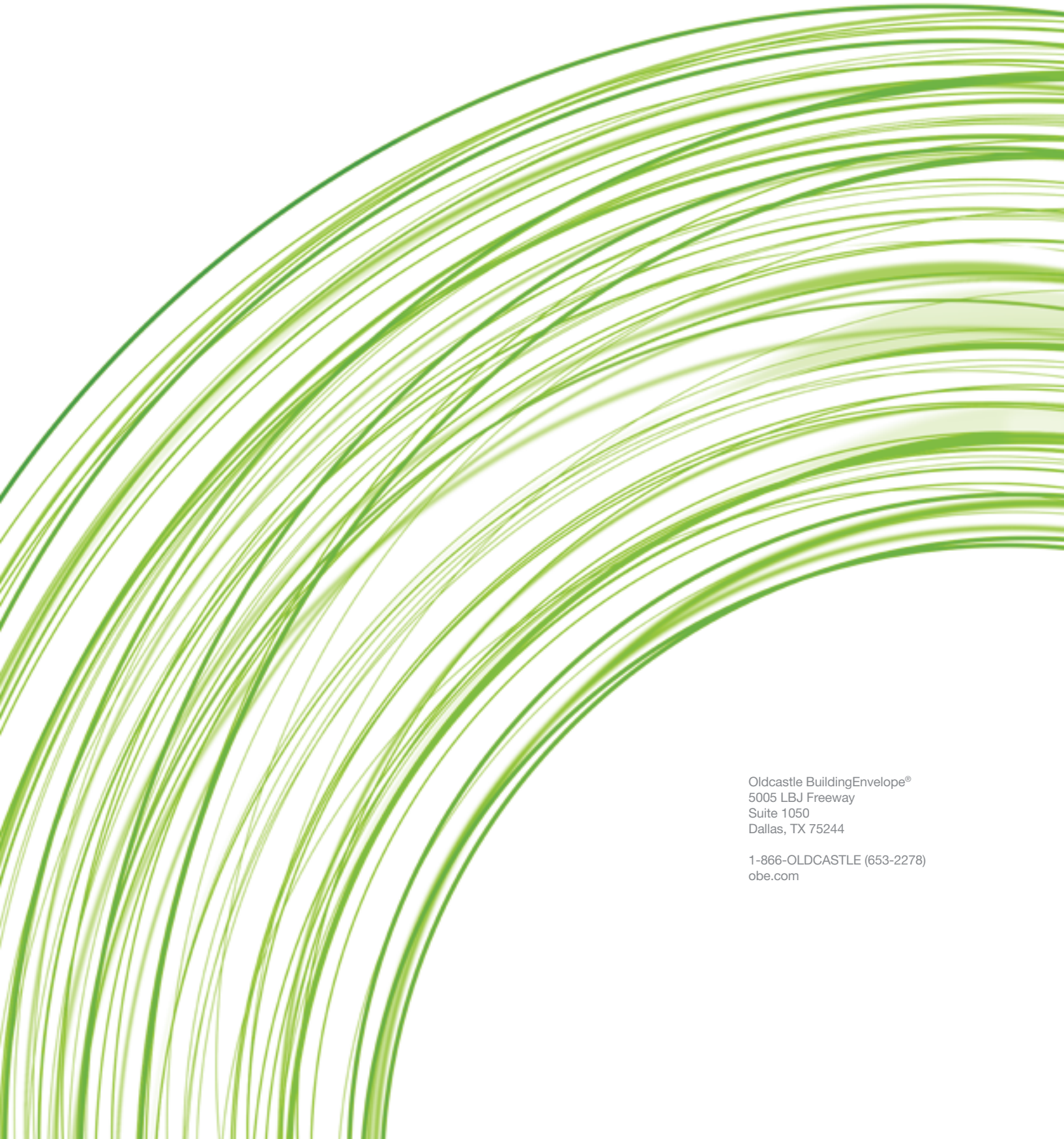
Max. Size is 60" x 96" for all models **(3)** Forced-entry **(4)** These products resist bullet penetration; they are not designed to resist spalling **(5)** Walker McGough Foltz & Lyeria **(6)** Glass Clad Polycarbonate

Blast Mitigating

Typical Make-up

Model#	110100	110110	110120
Construction			
Glass	1/8"	3/16"	1/4"
PVB	0.060"	0.060"	0.060"
Glass	1/8"	3/16"	1/4"
Thickness			
in	5/16	7/16	9/16
Weight lbs/ft²	3.60	5.31	6.41

Listed above are constructions of laminated glass that are most commonly specified for bomb-blast resistance mitigation. These are often used in Seismic applications. Additionally, all-glass laminates, polycarbonate laminates and glass-clad polycarbonates are available.



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