

DESIGN REVIEW REQUEST

)
 OWNTOWN DESIGN (DK)

HISTORIC ZONING (H) INFILL HOUSING (IH)

RECEIVED	
JAN 3 1 2020	
Knoxville-Knox County Planning	

Tennessee Theatre Expansion_612 Gay Street

Applicant	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
1/31/2020	2/19/2020	2-D-20-DT
Date Filed	Meeting Date (if applicable)	File Number(s)

CORRESPONDENCE

All correspondence related to this application should be directed to the approved contact listed below.

🗌 Owner	Contractor	🛾 Engineer 🔳	Architect/Land	scape Architect			
Whitney Ma	nahan			McCarty Holsaple	McCarty		
Name				Company		· · · · · ·	•
550 W Main Street Suite 300			Knoxville	TN⊦	37902		
Address				City	State	Zip	
865-544-2000 wmanahan@mhmind			ninc.com				
Phone		Ēr	nail				

CURRENT PROPERTY INFO

Historic Tennessee Theatre Foundation	604 S GAY ST	865,684,1200
Owner Name (if different from applicant)	Owner Address	Owner Phone
612 S GAY St	095IF034	
Property Address	Parcel ID	
Central City	DK-H	
Neighborhood	Zoning	• •• •

AUTHORIZATION

Staff Signature

Applicant Signature

Midnel Reynolds Please Print

1/31/2020

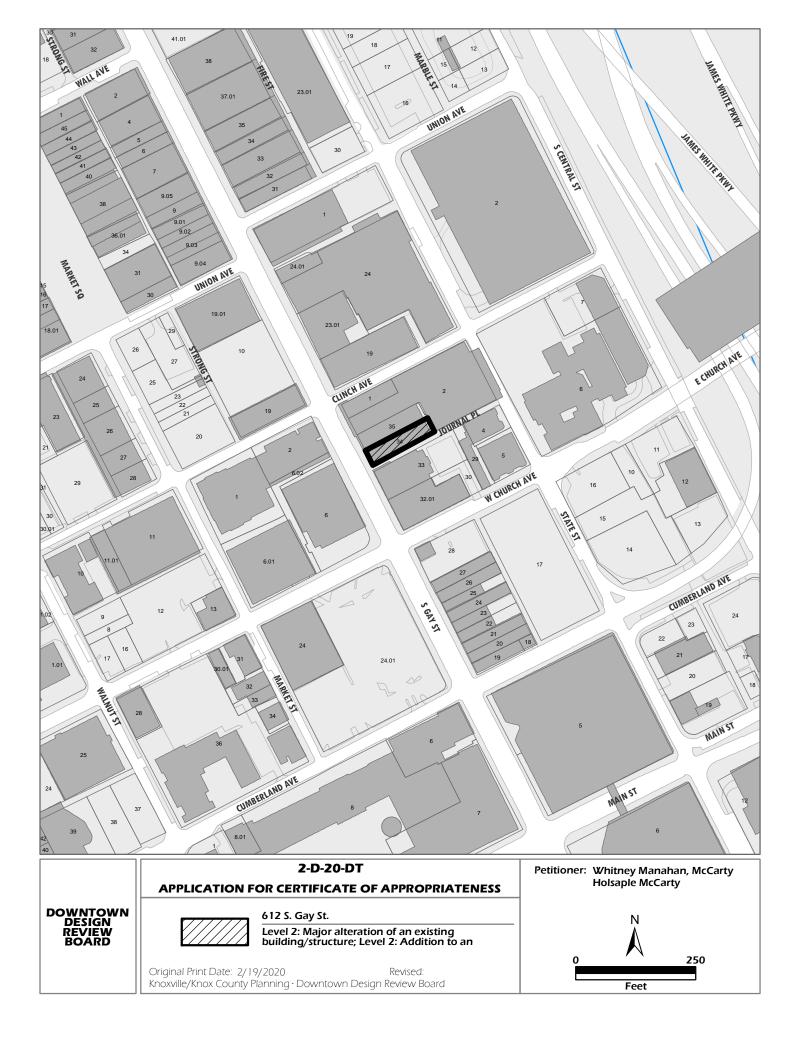
Whitney Manahan Please Print

1/31/2020

Date

REQUEST

	Level 1:										
	🖸 🖸 Signs 🛛 🔳 Alteration of an existing building/structure										
Ū,	Level 2:										
DES	Addition to an existing building/structure		,								
S	Level 3;										
NO	Construction of new building/structure 🛛 Site design, parking, plazas, landscape										
NN N	See required Downtown Design attachment for mare details.										
DOWNTOWN DESIGN	Brief description of work: Restoration of the entire building lacade and addition of egres	is stair and connector tower between 612 S Gay S	treet and the Tennesses Theatre Auditorium.								
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	······································										
	Signs Routine repair of siding, windows, roof, or other feature	s, in-kind; Installation of gutters, st	form windows/doors								
σ	Level 2: Major repair, removal, or replacement of architectural elements or n	natorials 🔲 Additions and ass	arconuctructure								
N	Level 3:		essury structures								
Ñ	Construction of a new primary building										
5	Level 4:										
HISTORIC ZONING	Relocation of a contributing structure Demolition of a contribu	uting structure									
HIS	See required Historic Zoning attachment for more details.										
	Brief description of work: Most infilled windows will be opened up. All windows will be replaced to match historic configurations as closely as possible.										
	All stone and brick will be repaired and repointed. New roofing, downspouts and gutters will be ad	ded. The front entry will be renovated to more a	closely match historic photos including,								
	removing the canvas awning, adding like at the entry, removing the modern storefront and adding	a wood, glass and metal door based on historic	c photos that meets current codes.								
	Level 1:										
	 Driveways, parking pads, access point, garages or similar facilities Level 2: 										
9	Additions visible from the primary street Changes to porches v.	isible from the primary street									
JSI IS	Level 3:	sible nom the primary street									
INFILL HOUSING	New primary structure										
Ξ	Site built										
E.	See required infill Housing ottachment for more details.										
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		FEE 1; / / / /	TOTAL								
	ATTACHMENTS	FEE 1: Level 2 \$1	D TOTAL:								
NĽY	Downtown Design Checklist										
STAFF USE ONLY	Historic Zoning Design Checklist	FEE 2:	\$ 100.00								
nsı	Infill Housing Design Checklist		H 100.								
₹F	ADDITIONAL REQUIREMENTS										
ST	Property Owners / Option Holders	FEE 3;									
	Level 1: \$50 • Level 2: \$100 • Level 3: \$250 • Level 4: \$500										



19020

612 SOUTH GAY STREET RENOVATION

TENNESSEE THEATRE 612 South Gay St. Knoxville, TN

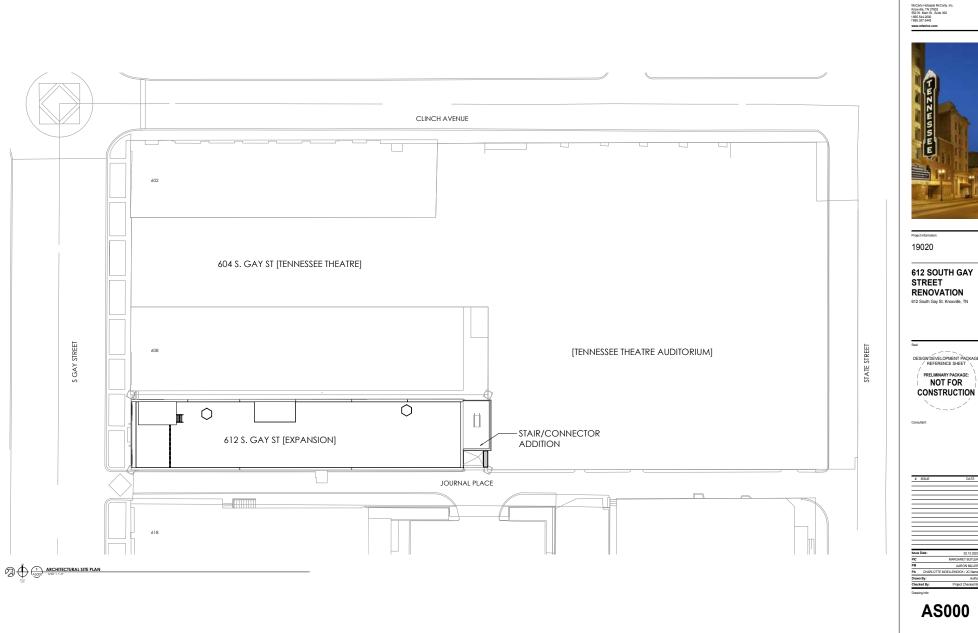
DOWNTOWN DESIGN REVIEW BOARD

02/19/2020

FACADE RENOVATION PACKAGE ONLY SIGNAGE WILL BE SUBMITTED AT A LATER DATE

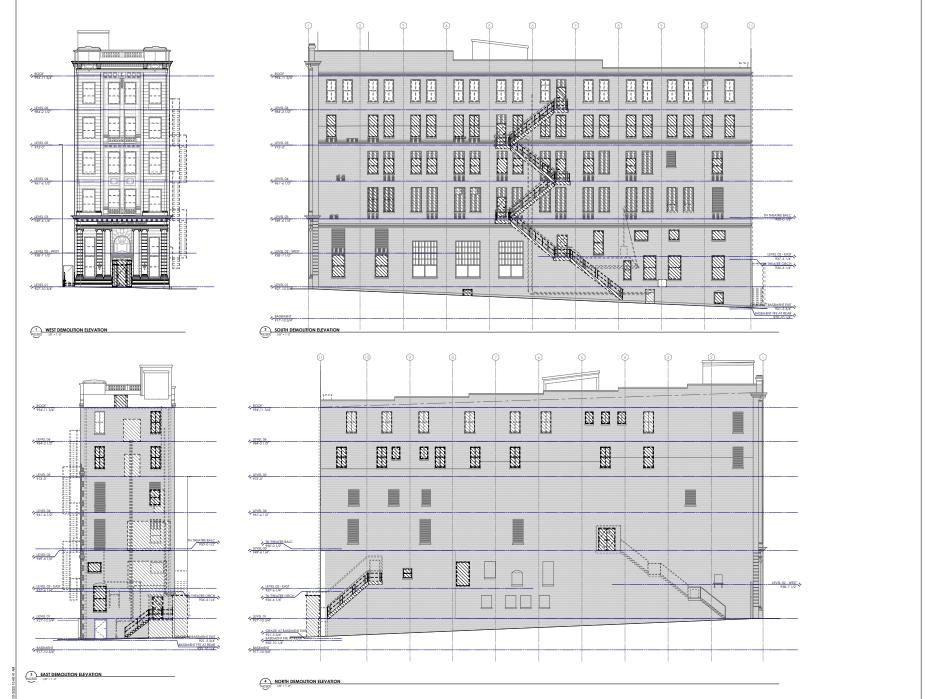


McCARTY HOLSAPLE McCARTY



ARCHITECTURAL SITE PLAN

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McCarly Holesek McCarly, Inc. Koowille, TA 19762 969 W. Males R., Sulla 300 1865 544 200 1865 537 542 www.mhminc.com

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612 SOUTH GAY STREET RENOVATION 612 South Gay St. Knoxville, TN

DOWNTOWN DESIGN REVIEW BOARD

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COMPOSITE DEMOLITION

ELEVATIONS

DEMO ELEVATION NOTES

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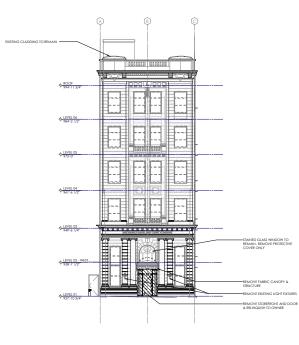




AD301

WEST & EAST DEMO ELEVATIONS

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AD301 1/8"- 1'-0"

Ô ₿ REMOVE DOWNSPOUT AND GUTTER AT ELEVATOR PENT HOUSE REMOVE ROOFING MEMBRANE STAIR TOWER WALLS AND ROOF REMOVE CHIMNEY EAST WALL TO ROOF LEVEL REMOVE REST OF CHIMNEY TO BASEMENT PER ------/E ALL EXISTING SPOUTS AND GUTTERS 1112 ROOF 88 REMOVE WINDOW AND SILL, PREPARE FOR BRICK INFILL ♦ LEVEL 06 984-21/2 (R) REMOVE WINDOW AND SILL PREPARE FOR BRICK INFILL + LEVEL 05 973-0 TO STRUCTURAL INFILL TO REMAIN. REMOVE WINDOW AND SILL INFILL TO REMA EW MASONRY OPENING, REFER LEVEL O **WU** REMOVE CONDUIT AND PVC CONDENSATE LINES TO STRUCTURAL 4 LEVEL 03 949'-6 1/4" REMOVE WINDOW AND SLL, PREPARE FOR BRICK INFILL REMOVE CONDENSING UNIT ON STAIR ROOF ◆ LEVEL 02 - E 937-6 1/4" REMOVE METAL BRACK ♦ LEVEL 01 927-10 3/4" EMOVE PLYWOOD AND PREPARE OPENING TO INFILL WITH BRICK REMOVE STAIR, BLOCK WALL RAILING AND STAIR COVER REMOVE DOOR AND FRAME. PREPARE FOR RATED DOOR AND FRAME-EMENT EXIT BASEMENT FFE AT REAR 920-10 1/4 AD301 1/8" - 1-0"



WEST ELEVATION EXISTING CONDITIONS (GAY STREET)

STONE ABOVE LINTELS HAS SHIFTED AND NEEDS REPAIR



ADX301

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DOWNTOWN DESIGN REVIEW BOARD PRELIMINARY PACKAGE: NOT FOR CONSTRUCTION

WEST & EAST EXISTING CONDITIONS Copyright © 2019 McCarty Holsaple McCarty

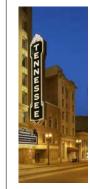
EAST ELEVATION EXISTING CONDITIONS

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DEMO ELEVATION NOTES

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612 SOUTH GAY

STREET RENOVATION 612 South Gay St. Knoxville, TN

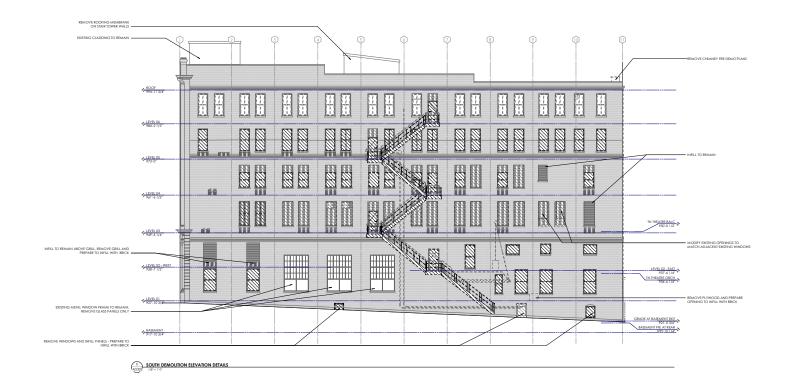


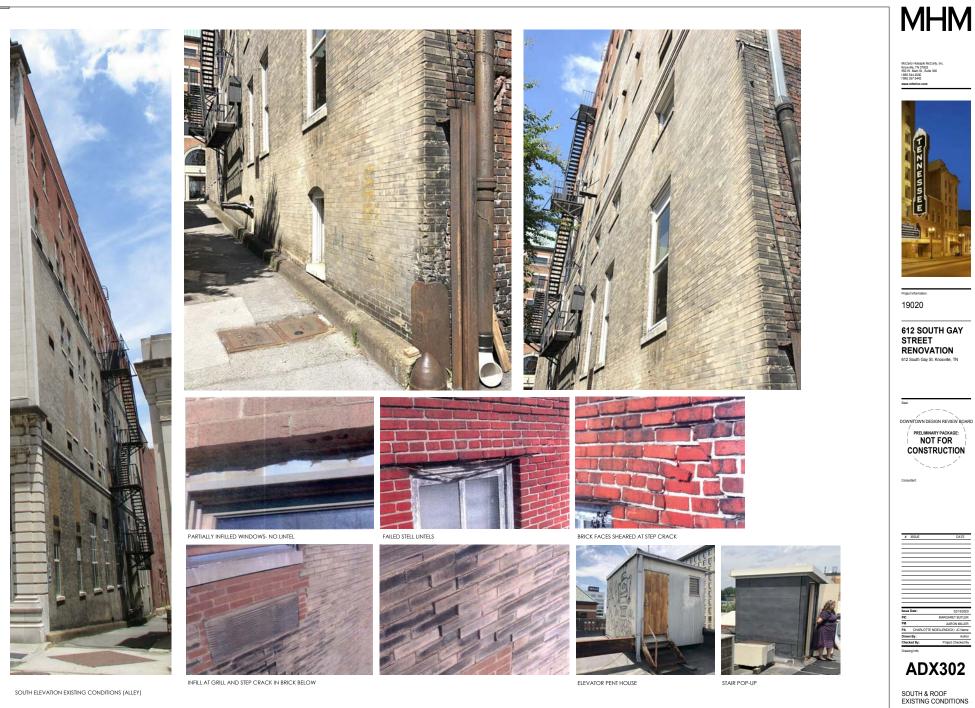


AD302

SOUTH DEMO ELEVATION







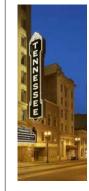
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DEMO ELEVATION NOTES

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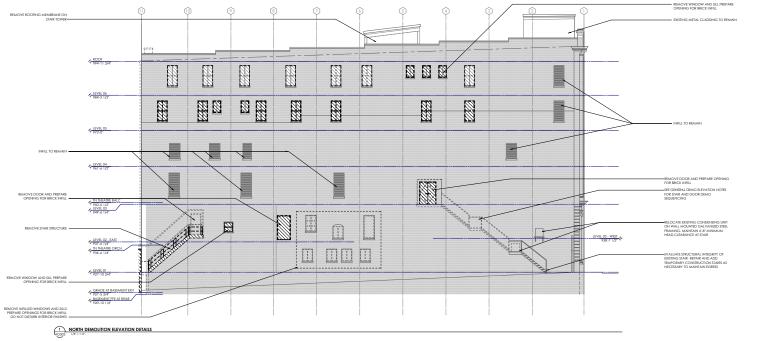
612 SOUTH GAY STREET RENOVATION 612 South Gay St. Knoxville, TN





AD303

NORTH DEMO ELEVATION



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Project Information

LOOKING DOWN AT NORTH ALLEY FROM ADJACENT BUILDING ROOF

WINDOWS INFILLED FROM INTERIOR AT FIRST LEVEL

612 SOUTH GAY STREET RENOVATION 612 South Gay St. Knoxville, TN



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ADX303

NORTH EXISTING CONDITIONS



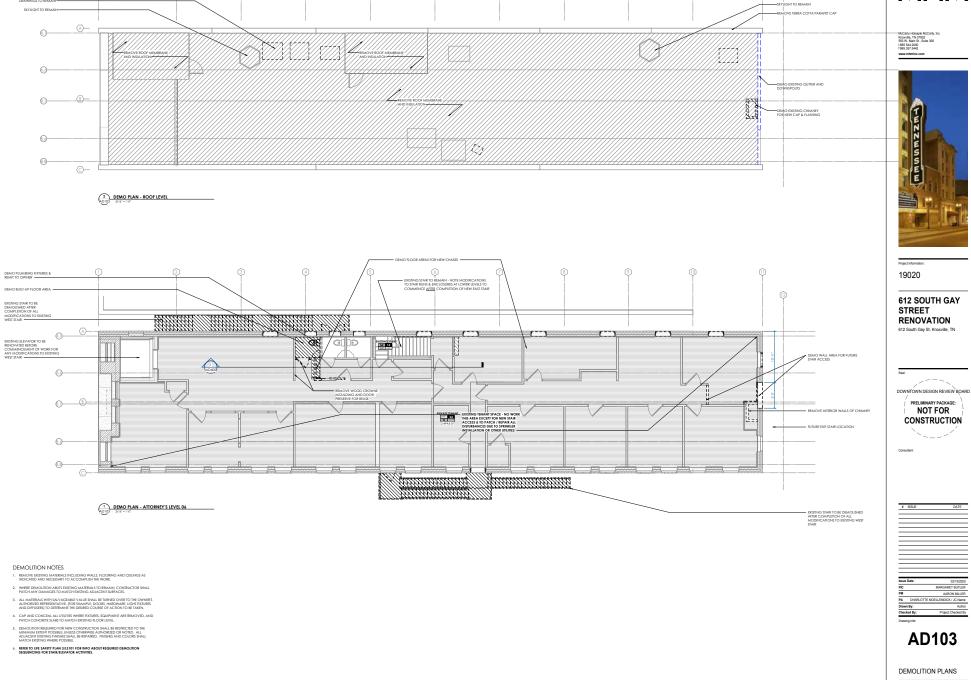


NORTH ALLEY AT SECOND LEVEL- LOOKING WEST

STAIR ENCLOSURE AT NORTHEAST CORNER

NORTH ELEVATION EXISTING CONDITIONS

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Bour DOWNTOWN DESIGN REVIEW BOARD / PRELIMINARY PACKAGE: NOT FOR CONSTRUCTION

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BBLE DATE
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CHARLOTTE MOELLENDICK / JC Name 97 Autor 4897 Project.Checked By Into: A3000

COMPOSITE EXTERIOR ELEVATIONS

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SOUTH ELEVATION C. 1929



ORIGINAL WINDOWS ON THE SOUTH, EAST AND NORTH ELEVATIONS WERE 2 OVER 2 DOUBLE HUNG OR 2 LITE HOPPER WINDOWS, REPLACEMENT WINDOWS WILL BE ALLIMINUM WOOD CLAD WINDOWS, THE 2 OVER 2 WILL BE DOUBLE HUNG AND THE 2 LITE WILL BE FIXED.

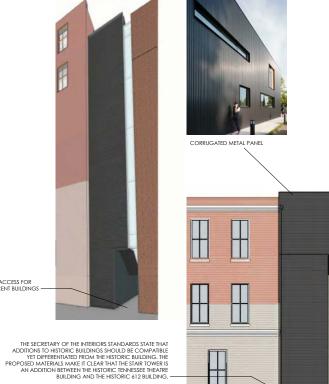
WEST ELEVATION C. 1923



- ORIGINAL WINDOWS ON THE WEST ELEVATION LOWER LEVELS WERE PIVOT WINDOWS WITH A SPANDREL WINDOW AT THE MEZANINE FLOOR LEVEL REPLACEMENT WINDOWS WILL BE FIXED, ALUMINIUM CLAD WOOD WINDOWS WITH SPANDREL GLASS DUE TO THE EXISTING ELEVATOR LOCATION.

- ORIGINAL WINDOWS ON THE WEST ELEVATION UPPER LEVELS WERE 1 OVER 1 DOUBLE HUNG. REPLACEMENT WINDOWS BE ALUMINUM CLAD WOOD WINDOWS AND WILL MATCH ORIGINAL CONFIGURATIONS.

OPEN ACCESS FOR ADJACENT BUILDINGS



STAIR ADDITION WITH RENDERED MATERIALS



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GENERAL ELEVATION IMAGE REFERENCES

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ELEVATION NOTES



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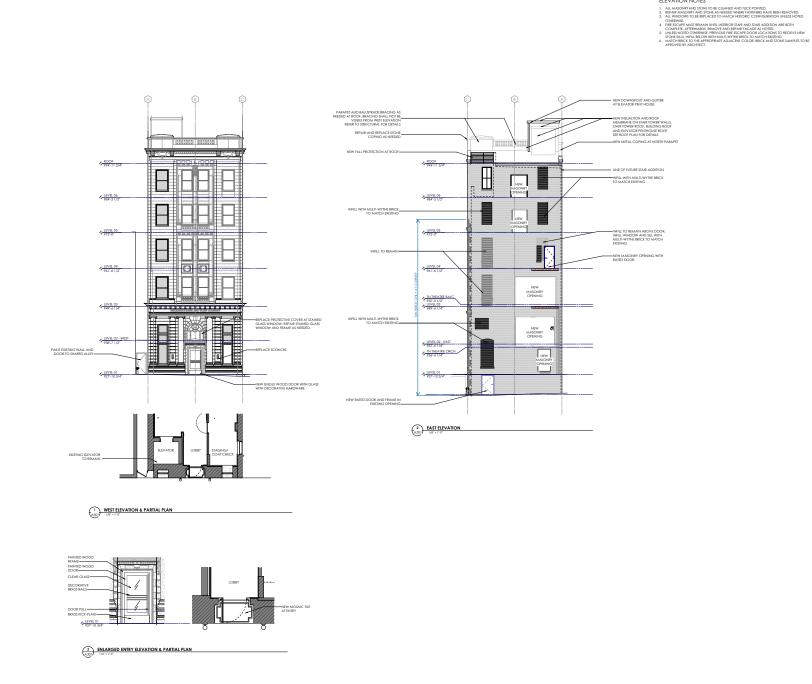
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WEST & EAST ELEVATIONS

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ELEVATION NOTES

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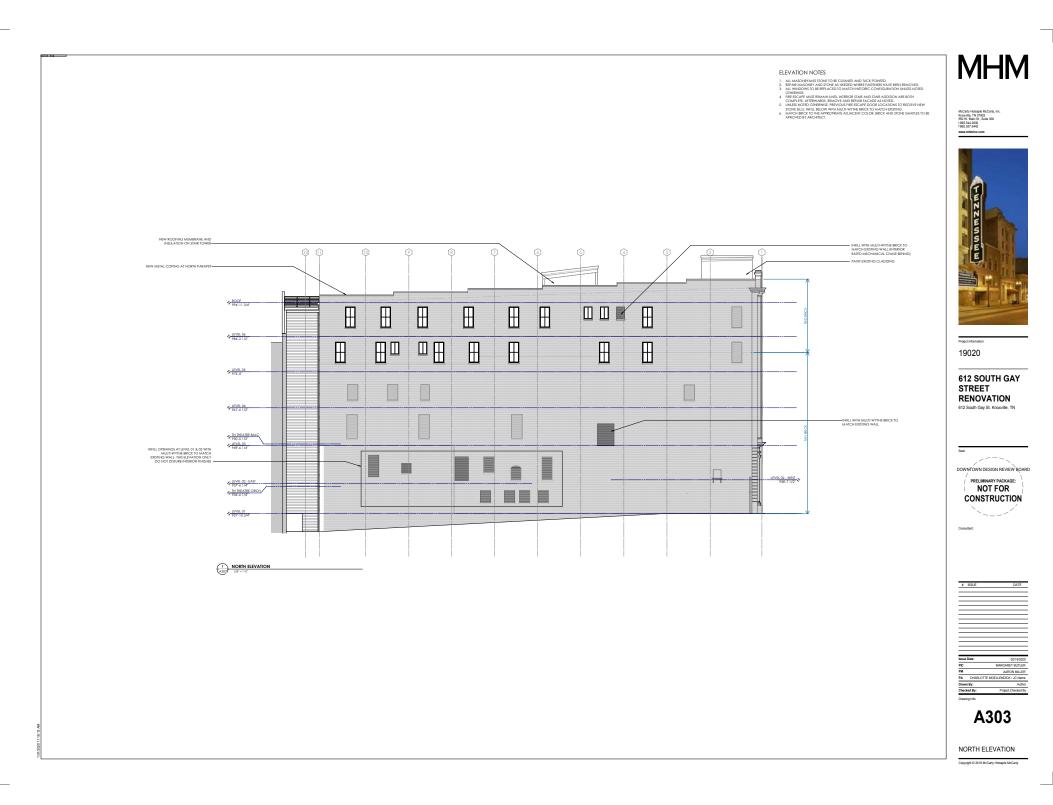
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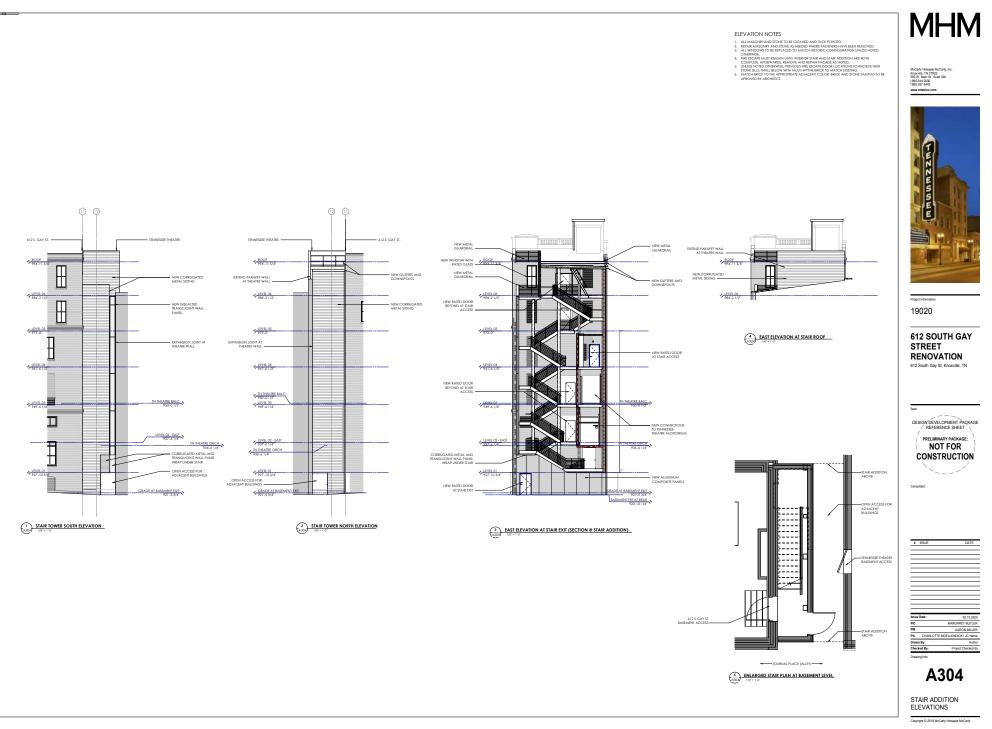
SOUTH ELEVATION

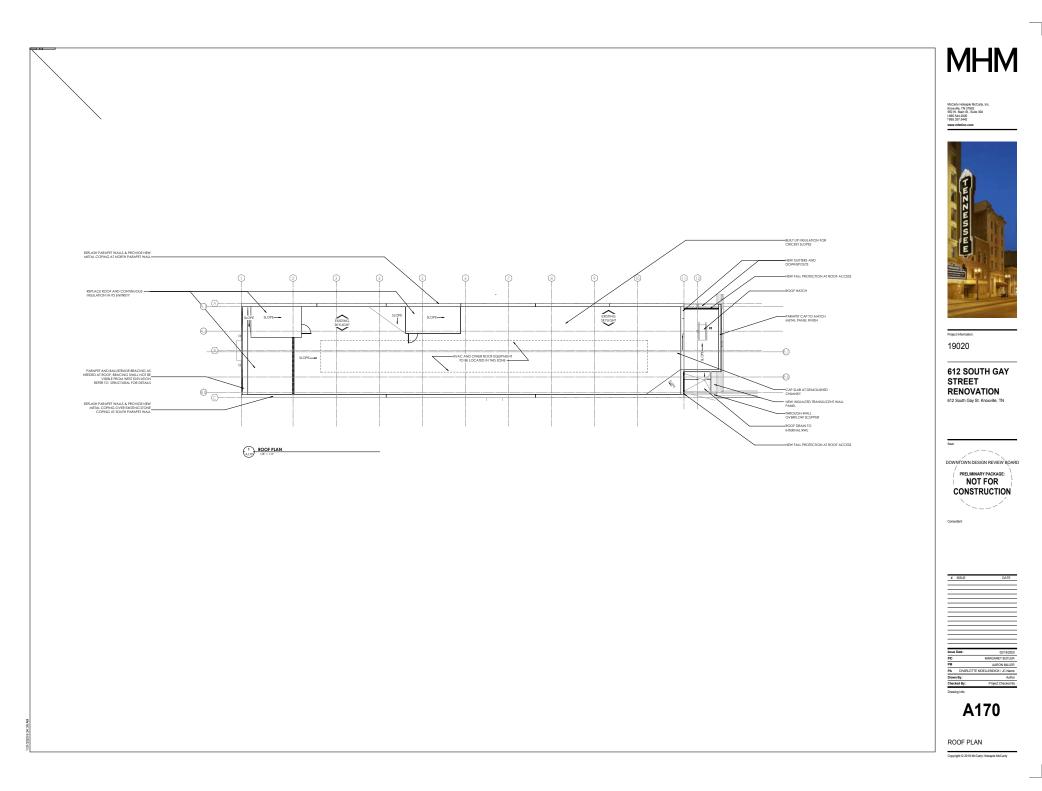


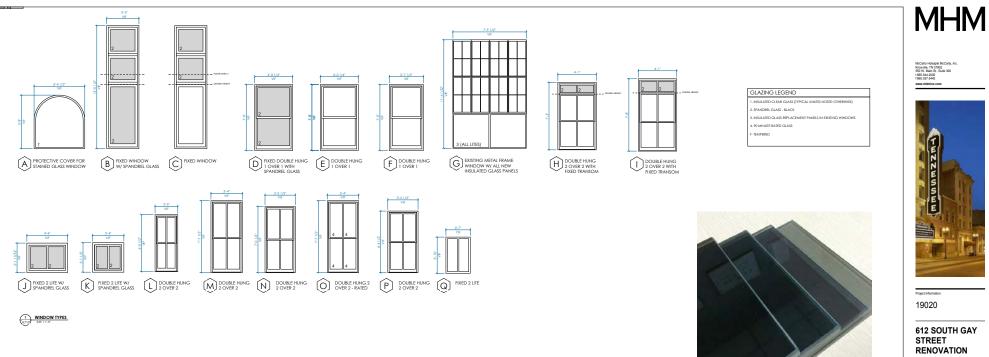


(1) SOUTH ELEVATION











Issue Da PIC PM PA CHARLOTTE

612 South Gay St. Knoxville, TN

Seal

Consultant

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EXTERIOR GLAZING & OPENING TYPES

7.2 PANEL

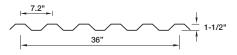
MATERIALS

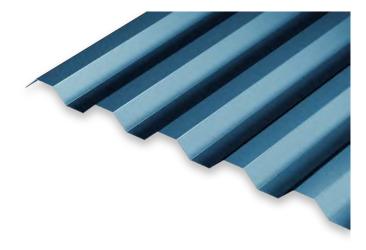
.032 aluminum .040 aluminum .050 aluminum 24 gauge steel 22 gauge steel Galvalume Plus

SPECS

36" Wide

1-1/2″ High





PRODUCT FEATURES

- ▶ 30-year non-prorated finish warranty
- Matching screws and rivets
- Closure strips available
- Precut short lengths (5'-0" minimum)
- Panel lengths up to 38'

MATERIAL

- 43 stocked colors (24 gauge steel)
- 15 stocked colors (22 gauge steel)
- ▶ 36 stocked colors (.032 aluminum)
- 22 stocked colors (.040 aluminum)
- 29 stocked colors (.050 aluminum)
- Galvalume Plus available

FLORIDA BUILDING PRODUCT APPROVALS

Please refer to pac-clad.com or your local factory for specific product approval numbers for exposed fastener panels.





high performance translucent building systems

FACADES

Wall Systems

Unitized Curtain Walls

Window Replacements

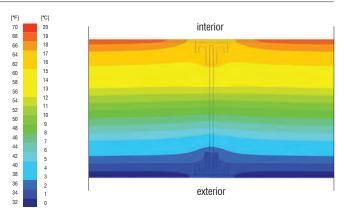


University Heights Charter School | Newark, NJ USA | KSS Architects (above)

Thermal Break Technology

For any high performance building envelope to perform optimally, careful consideration must be given to specify adequate levels of thermal insulation, minimize air infiltration, provide sufficient solar control, and eliminate thermal bridging to the greatest extent possible. To address potential thermal bridges, which can produce localized areas of higher heat transfer, Kalwall systems employ proprietary thermal break technologies for both the Kalwall panel and the Clamp-tite™ fastening system. The diagram on the right shows a thermal gradient, generated using THERM 7 software, to illustrate the effectiveness of the 2-3/4" (70 mm) Kalwall panel's thermally broken grid core.

Thermal Gradient Analysis: 0.14 "U" (0.79 W/m²K) panel



KALWALL

800 258 9777 | KALWALL.COM | +1 603 627 3861

Wall Systems

Translucent Wall Systems offer many budget-friendly, elegant side lighting solutions. From single story applications to mid-rise construction, Kalwall Wall Systems transform sunlight into glare-free daylight to enhance any space.

Standard Wall Systems

For certain climate zones and building types, non thermally-broken Wall Systems provide sufficient envelope performance that is both cost effective and meets energy codes.

Standard, aluminum interlocking I-beam panel grid core	
Standard aluminum Clamp-tite™ fastening system	
U-factors range from 0.53 - 0.18 (3.01 to 1.02 W/m²K)	
Solar Heat Gain Coefficients (SHGC) from 0.65 to 0.10	
Visible Light Transmission (VLT) values from 3% to 50%	

STANDARD SYSTEM | BACK FASTENED SYSTEM | CONCEALED FASTENERS | KALCURVE | 1-9/16" SYSTEM

Thermally Broken Wall Systems

For more demanding climate zones and building types, Thermally-Broken Wall Systems provide enhanced envelope performance to meet or exceed the toughest energy codes.

Thermally-broken, interlocking I-beam panel grid core	
Thermally-broken aluminum Clamp-tite™ fastening system	
U-factors range from 0.23 - 0.05 (1.31 to 0.28 W/m²K)	
Solar Heat Gain Coefficients (SHGC) from 0.28 to 0.10	
Visible Light Transmission (VLT) values from 3% to 50%	

THERMAL BREAK+STRUT SYSTEM | BACK FASTENED SYSTEM | CONCEALED FASTENERS | KALWALL 100

Specialty Applications

Kalwall offers many product configurations for projects that require special performance criteria to protect from extreme weather events and manage human safety + security

Class A fire ratings available for Wall Systems and Unitized Curtain Walls Windborne debris protection - tested and certified up to large missile D Blast resistant systems meet DOD UFC 4-010-01 anti-terrorism force protection Factory Mutual certified systems: Class I exterior wall FM 4881 & FM 4411 Factory Mutual explosion venting / pressure release systems: FM 4440

WINDBORNE DEBRIS PROTECTION | EXPLOSION VENTING | ANTI-TERRORISM FORCE PROTECTION | FM CLASS I

Sports Hall | Bussy-Saint-Georges, France | Marc Duplantier Architectes (below)



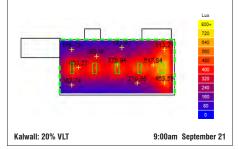




lease visit KALWALL.COM for all wall system specifications, CAD details, BIM families & performance charts online



RDU International Airport Terminal | Raleigh-Durham, NC | Clark Nexsen Architects (above)

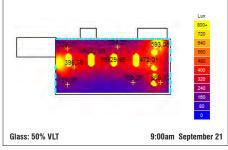


Daylight Modeling Studies: a complimentary service to optimize your daylighting design

Radiance Illumination

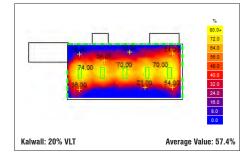
Provides a "snapshot" of daylight levels at a given point in time. Typically, simulations are made to study light levels at the Fall and Spring Equinoxes during the early morning, at solar noon, and late in the afternoon on both sunny and overcast skies anywhere in the world.

KALWALL



Glare Pattern Analysis

Helps to identify potential problem areas where glare is a concern such as offices, classrooms, athletic facilities and other spaces where visual acuity is critical. These studies are especially useful when designers and specifiers call for a mix of translucent and vision glazing (glass).



Daylight Autonomy

Gives average daylight values and shows what percentage of the time the space can operate at the target light level with daylight alone. sDA (spatial daylight autonomy) and ASE (annual sunlight exposure) are all available for LEED® documentation for daylighting credits.

Unitized Curtain Walls

Unitized Curtain Walls can do everything Wall Systems can but, with the added benefits offered by factory unitization. In addition to translucent wall panels, designers can integrate fixed and operable windows, opaque panels and fixed louvers. From single-story window walls to multi-story curtain walls, Kalwall Unitized Curtain Walls provide modular daylighting solutions that balance aesthetics, performance, and cost.



Factory Unitization

Large panel units, up to 5' x 35', are assembled and glazed at the factory. They can incorporate both translucent panels, fixed and operable vision glazing, as well as opaque panels and fixed louvers to provide superior fit, especially when compared to systems assembled in the field.



Rapid Installation

Once delivered to the site, these large units can be installed rapidly in order to save both time and money. This approach also allows the building to be enclosed in a fraction of the time compared to conventional curtain wall systems allowing interior work to commence much earlier.



Superior Performance

Once in service, unitized curtain walls offer higher levels of performance over the full lifetime of the system without sacrificing design flexibility. Perhaps, that is why architects, contractors, and owners alike can all reap the benefits without compromising their project goals.

Tintern Middle School | Melbourne, Australia | Architectus (below)



Please visit KALWALL.COM for all unitized curtain wall specifications, CAD details, BIM families & performance charts



Yale Sculpture Building | New Haven, CT | Kieran Timberlake Architects | Double Skin Facade System with Schuco[®] and Kalwall+Lumira (above)

Kalwall+Lumira® Aerogel

Aerogel is among the lightest and most effective insulating materials in the world. Cabot's Lumira aerogel is a solid which consists largely of air (>90%) contained in a structure with pore sizes less than the mean free path of air molecules, which severely inhibits heat transfer through the material, enabling world class performance. Cabot produces Lumira aerogel at its state-of-the-art manufacturing facility located near Frankfurt, Germany, where it began commercial production in 2003. Kalwall was the first company to offer Lumira aerogel in partnership with Cabot in its 2-3/4" (70 mm) translucent daylighting panel. Center of panel U-values of 0.05 (0.28 W/m²k)

KALWALL

Thermal Insulation: values per inch (25 mm) of material tested



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Window Replacments

Retrofits and Energy Upgrades with Kalwall Window Replacements result in dramatic savings by stopping heat loss and reducing electric light usage by offering glare free-usable diffuse daylight, eliminating the need for shades, and decreasing solar heat gain. Our high performance systems are very competitively priced, virtually maintenance free, and offer increased security compared to typical glass retrofits, for both increased impact resistance and vandalism.





Window Replacement Systems

Kalwall Window Replacements offer budget-friendly fenestration options that deliver glare-free daylighting while simultaneously increasing energy performance and decreasing maintenance requirements. Delivered in unitized formats, specifiers can combine translucent and vision glazing to provide diffuse daylight, views and ventilation. Perfect for deep energy retrofit (DER) & renovations, these systems can be installed in existing rough openings rapidly, minimizing disruption to building occupants.

Graffiti and vandal resistant face sheets including high impact options Highly insulated to reduce heating + cooling costs from HVAC systems Various head, sill & jamb detail options for retrofits in existing R.O.s Much lower maintenance requirements compared to conventional glazing Windborne debris protection - tested and certified up to large missile D

HC-2000 Windows

Kalwall manufactures its HC-2000 Windows for commercial and industrial applications where both budget and performance are primary drivers. HC-2000 windows have been engineered and tested to ensure reliability.

HC-2000 available: fixed, project-in, project-out (max sizes vary) HC-2000: AAMA/ANSI Performance Class: PI-AW50, PO-HC55, F-AW80

E-Series Windows

Kalwall manufactures its E-Series Windows for architectural applications where performance and craftsmanship are paramount. E-Series windows are engineered and tested for the most demanding applications.

E-Series available: fixed, project-in, project-out (max sizes vary) E-Series: AAMA/ANSI Performance Class: PI-AW60, PO-AW70, F-AW80 E-Series Large Missile Impact: Design pressure 80 PSF (3.83kPa) tested and certified to TAS 201, TAS 202, TAS 203, ASTM E1886 & ASTM E1996 STANDARD SYSTEM | THERMAL BREAK+STRUT SYSTEM | CONCEALED FASTENERS



Before Window Replacement
Old, energy-inefficient single-pane glazing



During Window Replacement Replacement system installed in existing R.O.s



After Window Replacement New, energy-efficient Kalwall system in service.

Please visit KALWALL.COM for all window replacement specifications, CAD details, BIM families & performance charts

Experience the world's most advanced daylighting systems



Indoor Football Practice Facility, Clemson University | Clemson, SC | Infinity Architecture



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KALWALL°



Size and Performance Data

	Clad LX	Wood LX	Clad SE
Sizes			
Standard double-hung vent/fixed sizes	•	•	•
Transom sizes	•	•	•
Egress sizes	٠	•	•
Single-hung	٠	•	-
Simulated-hung	•	•	-
Single-hung – arch head	•	•	-
Cottage sash split	٠	•	•
Variable sash split	٠	•	-
Special sizes available	•	٠	•
Performance 1			
Meets or Exceeds AAMA/WDMA Ratings	H-CW30 - CW50 Hallmark Certified	H-CW30 - CW45 Hallmark Certified	H-CW30 - CW50 Hallmark Certified
Air Infiltration (cfm/ft² of frame @ 1.57 psf wind pressure)₂	0.11	0.11	0.11
Water Resistance	4.6 - 7.5 psf	4.6-6.9 psf	4.6-7.5 psf
Design Pressure	30-50 psf	30-45 psf	30-50 psf
HurricaneShield® Products with Impact-resistant Glass	CW-60 Hallmark Certified	-	_
Other Performance Criteria			
Forced Entry Resistance Level (Minimum Security Grade) ₃	10	10	10
Operating Force (lb) Initiate Motion / Maintain Motion (of Hallmark tested size and glazing) $_{\mathtt{4}}$	40/45	40/45	40/45

Sound Transmission Class / Outdoor-Indoor Transmission Class

			Glazin				
Product	Frame Size Tested₅	Overall Glazing Thickness	Exterior Glass Thickness	Interior Glass Thickness	Third Pane Thickness	STC Rating	OITC Rating
Architect Series	WITH INTEGRA	AL GRILLES					
Wood LX window	45" x 65"	11/16"	2.5 mm	2.5 mm	-	27	24
	45" x 65"	11/16"	3 mm	6 mm Laminated	-	34	29
	WITH REMOVA	BLE OR NO GF	RILLES				
	45" x 65"	11/16"	2.5 mm	2.5 mm	-	26	22
	45" x 65"	11/16"	3 mm	3 mm	-	29	24
Architect Series	WITH INTEGRA	AL GRILLES					
Clad LX or	45" x 65"	11/16"	2.5 mm	2.5 mm	-	27	25
SE window	45" x 65"	11/16"	3 mm	3 mm	-	29	25
	45" x 65"	11/16"	3 mm	5 mm	-	33	29
	45" x 65"	11/16"	3 mm	6 mm Laminated	-	34	29
	WITH REMOVA	BLE OR NO GF	RILLES				
	45" x 65"	11/16"	2.5 mm	2.5 mm	-	26	22
	45" x 65"	11/16"	3 mm	3 mm	-	28	23
	45" x 65"	11/16"	3 mm	5 mm	-	32	28
	45" x 65"	11/16"	3 mm	6 mm Laminated	-	33	28

(-) = Not Available

(1) Maximum performance for single unit when glazed with the appropriate glass thickness. See Design Data pages in this section for specific product performance class and grade values.

(2) Published performance data for air infiltration is determined by testing a minimum of four (4) products of NFRC model size. Testing is conducted in accordance with ASTM E283. Air infiltration ratings for products will differ by size. The performance data does not apply to combination assemblies unless noted. Actual product performance may vary for a number of reasons including installation and product care.

(3) The higher the level, the greater the product's ability to resist forced entry.

(4) Glazing configurations may result in higher operational forces

(5) ASTM E 1425 defines standard sizes for acoustical testing. Ratings achieved at that size are representative of all sizes of the same configuration.

Pella 2019 Architectural Design Manual | Division 08 - Openings | Windows and Doors | www.PellaADM.com



Features and Options

Standard	Options / Upgrades
Glazing	
Glazing Type	
Dual-Pane Insulating Glass	_
Insulated Glass Options/Low-	E Types
	SunDefense™ Low-E
	AdvancedComfort Low-E
Advanced Low-E	NaturalSun Low-E
	Clear (no Low-E coating)
Additional Glass Options	
	Tempered Glass
	Obscure Glass 1
Annealed Glass	Tinted Glass (Bronze, Gray and Green)
	HurricaneShield® Products with Impact-Resistant Glass (Laminated Dual-Pane Insulating Glass₂)
Gas Fill/High Altitude	
Argon	High altitude
Wood types	
Pine	Mahogany (clad and wood LX only), Douglas Fir (clad LX only)
Exterior 1	
	EnduraClad Plus protective finish
EnduraClad® protective finish	Factory Primed Pine wood exterior
	Unfinished Mahogany wood exterior
Interior	
Unfinished Wood	Factory primed 3, Factory prefinished paint 3, Factory prefinished stain
Hardware	
Hardware Finish	
Champagne, White, Brown or Matte Black	Bright Brass, Satin Nickel, Oil-Rubbed Bronze, Antique Brass, Distressed Bronze, Distressed Nickel
Sash Locks	
Cam-action lock	Simulated lock, Air conditioner lock, Historical spoon-style lock (surface mounted)
Tilt-Wash Cleaning	
Tilt to interior on both sashes	-
Other Hardware	
-	Sash lifts
Grilles	
Integral Light Technology® G	rilles
-	Traditional, Prairie, Top Row, Cross, New England, Victorian, Diamond, Custom
Roomside Removable Grilles	
-	Traditional, Prairie, Custom
Grilles-Between-the-Glass	
-	Traditional, Prairie, Top Row1, Cross or Custom-Equally Divided
Screens	
-	Full-Height or Half-height InView™ screens or Vivid View® screens

(1) Contact your local Pella sales representative for current color options.

(2) Low-E coatings are limited on Laminated Glass, see detailed product description or glazing performance for full details.

(3) Not available on Mahogany and Douglas Fir interiors.

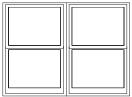


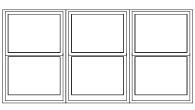
Combinations

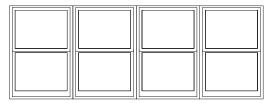
Combinations are a great way to create visual interest in any project. A combination is an assembly formed by two or more separate windows or doors whose frames are mulled together by a combination or reinforcing mullion.

Pella window combinations are available in an endless variety of arrangements. Below are available factory-assembled combinations. Some units can be fixed or vent depending on availability. Refer to Clad/Wood Overview Section for typical combinations requirements, and limitations related to mulling various combinations.

Contact your local Pella sales representative for more information.



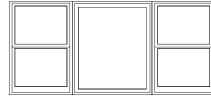


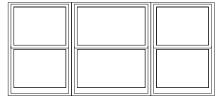


Two-Wide









Center Fixed with Flankers

Three-Wide Unequal



Transom over

Single

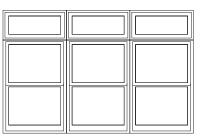
Clad Frame over

Single



Two-Wide Transoms over

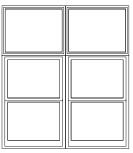
Two-Wide



Three-Wide Transoms over Three-Wide



Single Clad Frame over Two-Wide



Two Wide Clad Frame over Two-Wide

Click to view Clad-Wood Combinations Sections

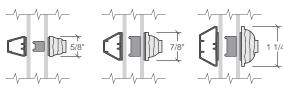
• Combination Recommendations Downloadable PDF.



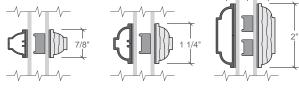
Grille Profiles

Integral Light Technology ®

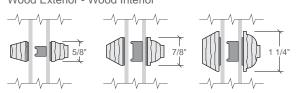
Putty and Ogee Glaze Grilles Clad Exterior - Wood Interior



Ogee Glaze Grilles Clad Exterior - Wood Interior



Putty and Ogee Glaze Grilles Wood Exterior - Wood Interior



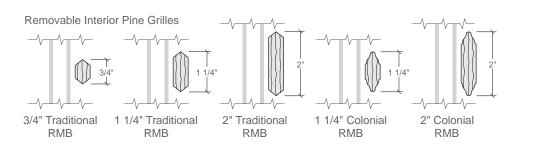
Contoured Aluminum -Grilles-Between-the-Glass





3/4" Contoured GBG

3/4" Contoured GBG



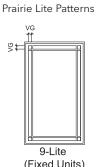
Interior wood ILT grilles available in Pine, Mahogany or Douglas Fir to match complete unit. Exterior wood ILT grilles available in Pine or Mahogany to match complete unit.

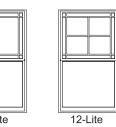


Grille Patterns

Integral light technology® Grilles and Roomside Removable Grilles

9





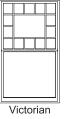
Standard corner lite dimension for Prairie patterns = 2-1/2" VG.

9-Lite

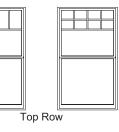
Available in transoms \geq 1'3" height and width. Available in all standard and special sizes.

(Fixed Units)

Other Available Patterns







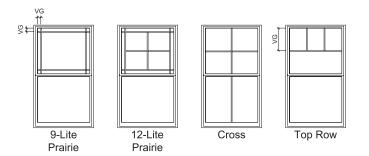


VG = Visible Glass

Lite dimensions noted can vary.

For size and pattern availability contact your local Pella sales representative.

Grilles-Between-the-Glass



For traditional patterns, see size tables.

Prairie

- Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
- Available in transoms \geq 1'3" height and width.

Cross

- Minimum DH frame height 35".
- Horizontal bar will be at 1/2" of the VG height of the top sash.

Top Row

- Minimum DH frame height 35".
- Horizontal bar will be at 1/2" of the VG height of the top sash.



Size Tables - Equal Sash

Fixed Transoms

		(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
	Opening	1' 9 ³ /4"	2' 1 ³ /4"	2' 5 ^{3/4} "	2' 9 ^{3/4} "	3' 1 ³ /4"	3' 5 ^{3/4} "	3' 9 ^{3/4} "	4' 0 ^{3/4} "
	Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
(375) (356)	." 1'2 ^{3/4} " 1'2"	2114	2514	2914	3314	3714	4114	4514	4814
(451) (432)	1' 5 ^{3/4} "	2117	2517	2917	3317	3717	4117	4517	4817
(654) (635)	2' 1 ^{3/4"} 2' 1"	2125	2525	2925	3325	3725	4125	4525	4825
Ven	t Units								
(908) (889)	2' 11 ^{3/4} " 2' 11"	2135	2535	2935	3335	3735	4135	4535	4835
(1 060) (1 041)	3' 5 ³ /4" 3' 5"	2141	2541	2941	3341	3741	4141	4541	4841
(1 213) (1 194)	3' 11 ³ /4" 3' 11"	2147	2547	2947	3347	3747	4147	4547	4847
(1 365) (1 346)	4' 5 ^{3/4} " 4' 5"	2153	2553	2953	3353	3753	4153	4553	4853
(1 467) (1 448)	4' 9 ^{3,4} " 4' 9"	2157	2557	2957	3357	3757 E	4157 E	4557 E	4857 E
(1 518) (1 499)	4' 113/4" 4' 11"	2159	2559	2959	3359 E1	3759 E	4159 E	4559 E	4859 E
(1 670) (1 651)	5' 5 ^{3/4} " 5' 5"	2165	2565	2965	3365 E	3765 E	4165 E	4565 E	4865 E

Egress Notes:

Check all applicable local codes for emergency egress requirements.

- $\mbox{E} = \mbox{Window meets minimum clear opening of} \\ 24" \mbox{ height, 20" width, and 5.7 ft^2. }$
- E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Opening Dimensions

Clad exterior units:

Dimensions shown in standard size tables are rough opening dimensions.

Wood exterior units:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

Frame	Roi	ugh	Mas	onry
Brickmould				
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



Special Sizes and Dimensions

Special Size Frame Dimension 1

Sash configuration	Vent-equal	Cottage	Fixed
Sash Glass Ratio Top % : Bottom %	50 : 50	40 : 60	NA
Shortest Unit	24-3/8"	42-1/4"	17"
Frame Size	(889)	(1 073)	(432)
Tallest Unit	96"	81"	71"
Frame Size	(2 438)	(2 057)	(1 803)
Unit Frame	14" to 48"	21" to 48"	17" to 59"
Width Range	(533 to 1 219)	(533 to 1 219)	(432 to 1 499)

Opening Dimensions

Clad exterior units: Dimensions shown in standard size tables are rough opening dimensions.

Wood exterior units:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

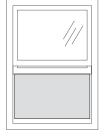
Frame	Rough		Mas	onry
Brickmould	Width	Height	Width	Height
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

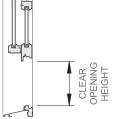
For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.



Equal Sash Only

	Vent Units	Fixed and Transom Units
Visible Glass	Width = Frame - 5.75" Height ₂ = (Frame - 8.1875") ÷ 2	Width = Frame - 5.75" Height = Frame - 5.75"
Actual Glass	Width = Frame - 4.375" Height ₂ = (Frame - 5.5") ÷ 2	Width = Frame - 4.375" Height = Frame - 4.375"
Clear Opening*	COW = Frame Width - 3.4375" COH = (Frame Height ÷ 2) - 4.4375"	-
Vent Area Ft²	(COW x COH) ÷ 144	-





Shaded portion shows vent area.

(1) Available within size range shown.

(2) Per sash.

* Some units with custom glazing may have limited travel.

See your local Pella sales representative for specific size information.



Detailed Product Description - Aluminum-Clad Exterior

- Select softwood, immersion treated with Pella's EnduraGuard[®] wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [LX: [clear pine] [mahogany] [douglas fir]] [SE: clear pine].
- Exterior surfaces are clad with aluminum.
- Components are assembled with screws, staples and concealed corner locks.
- Overall frame depth is 5" (127mm) for a wall depth of 3-11/16" (94mm). Optional factory applied jamb extensions available between 4-9/16" (116mm)
- and 7-3/16" (183mm) wall depths. Vinyl jamb liner [LX includes wood / clad inserts].
- Optional factory installed fold-out installation fins with flexible fin corners.
 Optional factory-applied EnduraClad® exterior trim.

Sash

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard , formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [LX: [clear pine] [mahogany] [douglas fir]] [SE: clear pine].
- Exterior surfaces are clad with aluminum and sealed.
- Corners mortised and tenoned, glued and secured with metal fasteners.
- Sash thickness is 1-7/8" (47mm).
- Sash exterior and interior profile is ogee.
- Double-Hung: Upper sash has surface-mounted wash locks] [Single-Hung: Fixed upper sash has surface-mounted wash locks] [Arch Head units have no wash locks].
- Lower sash has concealed wash locks in lower check rail.
- Sashes tilt for easy cleaning.
- Simulated-Hung units have non-operable upper and lower sashes.

Weatherstripping

- Water-stop santoprene-wrapped foam at head and sill.
- Thermoplastic elastomer bulb with slip-coating set into lower sash for tight contact at check rail.
- Vinyl-wrapped foam inserted into jamb liner to seal against sides of sash.

Glazing System

- Quality float glass complying with ASTM C 1036.
- Custom and high altitude glazing available.
 Silicone-glazed 11/16" dual-seal insulating glass [[annealed] [tempered]] [[clear] [[Advanced Low-E] [SunDefense™ Low-E] [AdvancedComfort] [NaturalSun Low-E] with argon]] [[bronze] [gray] [green] Advanced Low-E with argon].

Exterior

- Aluminum-clad exteriors shall be finished with EnduraClad[®] protective finish, in a multi-step, baked-on finish.
 - Color is [standard] [custom]1. - or -
- Aluminum-clad exteriors shall be finished with EnduraClad Plus protective finish with 70% fluoropolymer resin in a multi-step, baked-on finish Color is [standard] [custom]₁.

Interior

• [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [paint] [stain] 1].

Hardware

- Galvanized block-and-tackle balances are connected to self-locking balance shoes which are connected to the sashes using zinc die cast terminals and concealed within the frame.
- Sash lock is [standard (cam-action)] [historic spoon-style] [air-conditioner lock] [simulated lock (Single-piece lock ties upper and lower sash together. When removed, lower sash becomes operable)]. Two sash locks on units with frame width 37" and greater.
- Optional sash lift furnished for field installation. Two lifts on units with frame width 37" and greater.
- Hardware finish is [baked enamel [Champagne] [White] [Brown] [Matte Black]] [Bright Brass] [Satin Nickel] [Oil-rubbed Bronze] [Antique Brass] [Distressed Bronze] [Distressed Nickel].

Optional Products

Grilles

- Integral Light Technology® grilles
 - Interior grilles are [5/8"] [7/8"] [1-1/4"] [2"] ogee profile that are solid [LX: [pine] [mahogany] [douglas fir]] [SE: pine]. Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [paint] [stain]1].
 - Exterior grilles are [5/8" putty glaze profile] [7/8" [putty glaze] [ogee] profile] [1-1/4" [putty glaze] [ogee] profile] [2" ogee profile] that are extruded aluminum.
 - Patterns are [Traditional] [Prairie] [Top Row] [New England] [Victorian].
 - Insulating glass contains non-glare spacer between the panes of glass. Grilles are adhered to both sides of the insulating glass with VHB acrylic adhesive tape and aligned with the non-glare spacer.
- Grilles-Between-the-Glass₂
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.

- or -

- Patterns are [Traditional] [9-Lite Prairie] [Cross] [Top Row]
- Interior color is [White] [Tan₃] [Brown₃] [Putty₃] [Black] [Morning Sky Gray] [Ivory] [Sand Dune] [Harvest] [Cordovan] [Brickstone].
- Exterior colors is [standard]1.
- Roomside Removable grilles
 - [[3/4"] [1-1/4"] [2"] regular] [[1-1/4"] [2"] colonial] profile, with [Traditional] [Prairie] patterns that are removable solid pine wood bars steel-pinned at joints and fitted to sash with steel clips and tacks.

- or -

- Interior [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [paint] [stain] 1].
- Exterior [unfinished, ready for site finishing] [factory primed] [finish color matched to exterior cladding 5].

Screens

InView[™] screens

- [Half-Size] [Full-Size 4] black vinyl-coated 18/18 mesh fiberglass screen cloth complying with the performance requirements of SMA 1201, set in aluminum frame fitted to outside of window, supplied complete with all necessarv hardware.
- Full screen spreader bar placed on units > 37" width or > 65" height. Insect screen frame finish is baked enamel, color to match window
- cladding. - or -

• Vivid View® screens

- [Half-Size] [Full-Size 4] PVDF 21 / 17 mesh, minimum 78 percent light transmissive screen, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.Full screen spreader bar placed on units > 37" width or > 65" height.
- Insect screen frame finish is baked enamel, color to match window cladding.

Hardware

- Optional factory applied limited opening device available for vent units in stainless steel; nominal 3-3/4" opening. Limiting device concealed from view.
- Optional factory applied window opening control device available. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

(1) Contact your local Pella sales representative for current designs and color options.

(2) Available on units glazed with Low-E insulated glass with argon, clear insulated glass and obscure insulated glass.

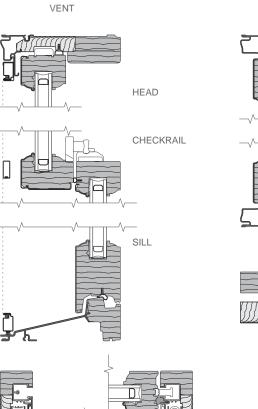
(3) Tan, Brown and Putty Interior GBG colors are available in single-tone (Brown/Brown, Tan/Tan or Putty/Putty). Other interior colors are also available with Tan or Brown exterior.

(4) Full screens are available on units \leq 96" height.

(5) Appearance of exterior grille color will vary depending on Low-E coating on glass.



Unit Sections - Wood Collection

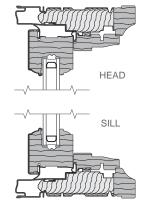


FIXED

HEAD

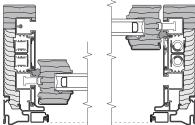
SILL

TRANSOM



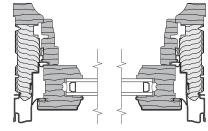


Mahogany or Douglas Fir Solid Pine



UPPER SASH

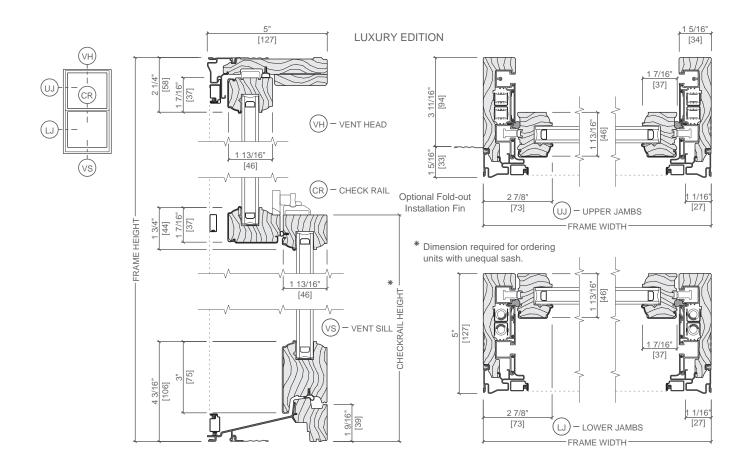
LOWER SASH



FIXED / TRANSOM JAMBS

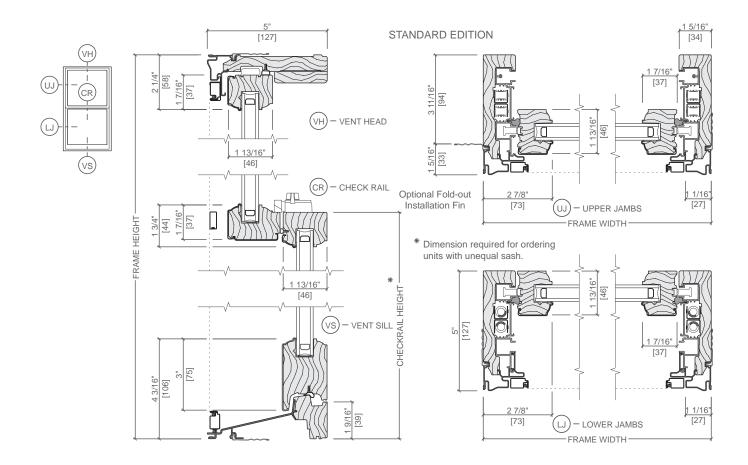


LX Unit Sections - Aluminum-Clad Ogee Exterior Glazing Profile



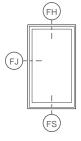


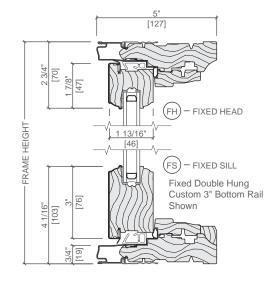
SE Unit Sections - Aluminum-Clad Ogee Exterior Glazing Profile

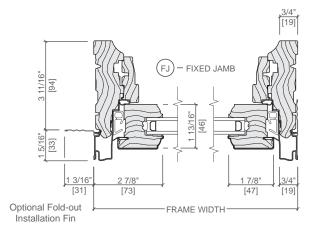




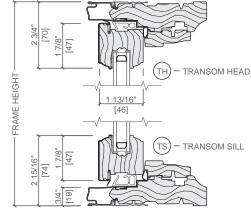
Unit Sections - Aluminum-Clad Ogee Exterior Glazing Profile

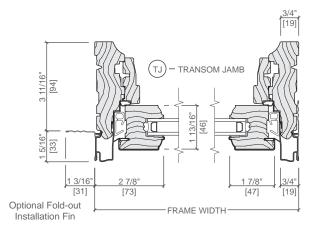




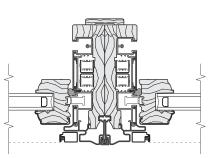




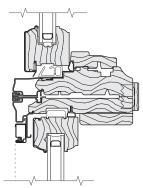




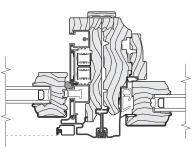
Typical Joining Mullions



VERTICAL JOINING MULLION LX VENT / LX VENT



HORIZONTAL JOINING MULLION TRANSOM / VENT



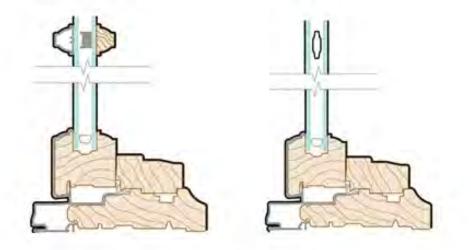
VERTICAL JOINING MULLION LX VENT / FIXED

Scale 3" = 1' 0" All dimensions are approximate.

See www.PellaADM.com for mullion limitations and reinforcing requirements.

Glazing - Architect Series Traditional Fixed Sash and Frame Window

Pella's widest variety of glazing systems and options provide optimal design, performance and budget flexibility.



Insulating glass options include:

- · Advanced Low-E Insulating Triple-Pane Glass with Krypton or Argon
- Advanced Low-E with argon*
- SunDefense[™] Low-E with argon*
- NaturalSun Low-E with argon*
- Clear
- Laminated
- Impact-resistant
- Tinted
- Reflective
- Spandrel glass or panels
- Obscure
- Tempered
- Custom



*Optional high-altitude Low-E insulating glass may not contain argon in most products.