



**NOW .05U**



# LEED® Project Checklist

How can Kalwall contribute to **green design** and the LEED rating system?

- Eliminates direct-beam nighttime illumination from leaving the building.
- Helps achieve minimum energy performance and can contribute to optimized energy performance as a highly insulated light-transmitting system.
- Kalwall contains  $\pm 20\%$  post-consumer recycled content. A Clearspan Skyroof™ from Structures Unlimited, Inc., can contain  $\pm 22\%$  post-consumer recycled content.
- Kalwall can contribute to the individual occupant control of ventilation by providing operable windows in panel unit walls and window replacement systems.
- Kalwall wall and roof systems provide daylighting without direct sunlight penetration, eliminating the need for exterior shading devices and interior light shelves. *Visit [daylightmodeling.com](http://daylightmodeling.com)*
- Kalwall can provide line-of-sight vision glazing by incorporating fixed or operable windows in wall systems and by incorporating glass gable areas and glass clerestories in roof applications.

**Kalwall is involved in many LEED-certified projects:**

**American Honda Corporation**, Gresham, Oregon; **Bozeman Library**, Bozeman, Montana; **Burton Family Football Complex**, Storrs, Connecticut; **Center on Halsted**, Chicago, Illinois; **Detroit Lions Headquarters and Training Facility**, Dearborn, Michigan; **Doyle Conservation Center**, Leominster, Massachusetts; **Durham Advanced Waste Water Treatment Facility Phase 4**, Durham, Oregon; **Eco Works** at Southlake Technology Park, Phase 1, Lenexa, Kansas; **Harvard University's Blackstone Office**, Cambridge, Massachusetts; **Navy Federal Credit Union**, Pensacola, Florida; **Lexington Medical Center**, Lexington, South Carolina; **Liberty Mutual**, Dover, New Hampshire; **Monsanto Company's Nidus Center for Scientific Enterprise**, Creve Coeur, Missouri; **Navy OSHA Lab Science Building**, Salt Lake City, Utah; **Rochester Water Bureau**, Rochester, New York; **Sidwell Friends School**, Bethesda, Maryland; **Southern California Gas Energy Resource Center**, Downey, California; **Steelcase Wood Furniture Manufacturing Plant**, Caledonia, Michigan; **Sweetwater Sound**, Fort Wayne, Indiana; **USAF Physical Fitness Center**, Barksdale AFB, Louisiana; **Weather Forecast Office**, Caribou, Maine; **Wild Oats**, Boulder, Colorado, and more.

Since 1955  
**Kalwall**®

**Structures Unlimited, Inc.**  
Energy-Efficient Skylights & Pool Enclosures

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ICC-ES  
Listed  
PFC 1705



## Sustainable Sites

Credit 8 – Light Pollution Reduction (1 point)

*"Minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction, and reduce development impact on nocturnal environments."*

Kalwall light-diffusing characteristics prevent direct-beam illumination from leaving the building interior.

## Energy & Atmosphere

Prerequisite 2 – Minimum Energy Performance (prerequisite)

*"Design the building project to comply with ... ASHRAE/IESNA Standard 90.1-2004..."*

Kalwall is the most highly insulating diffuse-light-transmitting system available. With insulating values up to and exceeding R-20 (.05 U) conductive winter heat loss is kept to a minimum. Additionally, Kalwall's low solar heat gain coefficient (SHGC), as low as .05, significantly reduces summer heat gain, greatly reducing tonnage requirements for air conditioning systems, while lowering utility bills.

## Energy & Atmosphere

Credit 1 – Optimize Energy Performance (1 point each, up to 10 points)

*"Demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1-2004 ..."*

As stated above, Kalwall provides superior winter and summer energy efficiency while transmitting diffuse daylight.

## Energy & Atmosphere

Credits 2.1 through 2.3 – Renewable Energy, 2.5%, 7.5%, 12.5% (1 point each)

*"Use on-site renewable energy systems to offset building energy cost. Calculate project performance ... as a percentage of the building annual energy cost (2.5%, 7.5%, 12.5%) ..."*

Structures Unlimited, Inc. can incorporate a glazing system into their skylights that will accept Photovoltaic (PV) panels.

## Materials & Resources

Credits 4.1 and 4.2 – Recycled Content (1 point each)

Credit 4.1

*"Use materials with recycled content such that the sum of post-consumer recycled*

# Green Building Rating System Project Checklist For



Possible LEED® v2.2 NC credit contribution from Kalwall products

Yes	?	No			
			<b>Sustainable Sites</b>		<b>14 Points</b>
			Prereq 1	Construction Activity Pollution Prevention	Required
			Credit 1	Site Selection	1
			Credit 2	Development Density & Community Connectivity	1
			Credit 3	Brownfield Redevelopment	1
			Credit 4.1	Alternative Transportation, Public Transportation Access	1
			Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1
			Credit 4.3	Alternative Transportation, Low-Emitting and Fuel-Efficient Vehicles	1
			Credit 4.4	Alternative Transportation, Parking Capacity	1
			Credit 5.1	Site Development, Protect or Restore Habitat	1
			Credit 5.2	Site Development, Maximize Open Space	1
			Credit 6.1	Stormwater Design, Quality Control	1
			Credit 6.2	Stormwater Design, Quality Control	1
			Credit 7.1	Heat Island Effect, Non-Roof	1
			Credit 7.2	Heat Island Effect, Roof	1
			Credit 8	Light Pollution Reduction	1
			Yes	?	No
			<b>Water Efficiency</b>		<b>5 Points</b>
			Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1
			Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1
			Credit 2	Innovative Wastewater Technologies	1
			Credit 3.1	Water Use Reduction, 20% Reduction	1
			Credit 3.2	Water Use Reduction, 30% Reduction	1
			Yes	?	No
			<b>Energy &amp; Atmosphere</b>		<b>17 Points</b>
			Prereq 1	Fundamental Commissioning of the Building Energy Systems	Required
			Prereq 2	Minimum Energy Performance	Required
			Prereq 3	Fundamental Refrigerant Management	Required
			Credit 1.1	Optimize Energy Performance, 10.5% New / 3.5% Existing	Mandatory 1
			Credit 1.2	Optimize Energy Performance, 14% New / 7% Existing	Mandatory 1
			Credit 1.3	Optimize Energy Performance, 17.5% New / 10.5% Existing	1
			Credit 1.4	Optimize Energy Performance, 21% New / 14% Existing	1
			Credit 1.5	Optimize Energy Performance, 24.5% New / 17.5% Existing	1
			Credit 1.6	Optimize Energy Performance, 28% New / 21% Existing	1
			Credit 1.7	Optimize Energy Performance, 31.5% New / 24.5% Existing	1
			Credit 1.8	Optimize Energy Performance, 35% New / 28% Existing	1
			Credit 1.9	Optimize Energy Performance, 38.5% New / 31.5% Existing	1
			Credit 1.10	Optimize Energy Performance, 42% New / 35% Existing	1
			Credit 2.1	On-Site Renewable Energy, 2.5%	1
			Credit 2.2	On-Site Renewable Energy, 7.5%	1
			Credit 2.3	On-Site Renewable Energy, 12.5%	1
			Credit 3	Enhanced Commissioning	1
			Credit 4	Enhanced Refrigerant Management	1
			Credit 5	Measurement & Verification	1
			Credit 6	Green Power	1
			Yes	?	No

*content plus one-half of the pre-consumer content constitutes at least 10% of the total value of the materials in the project."*

Credit 4.2

*"Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes an additional 10% (total of 20%)"*

A typical Kalwall system contains ±20% post-consumer/pre-consumer recycled content, primarily in the aluminum extrusions used in fabricating the Kalwall panels and in the aluminum Clamp-tite installation system. Structures Unlimited, Inc.'s clearspan skylights and pool enclosures have an even greater recycled content, up to 30% or more, due to the the aluminum box beam structure inherent to these systems.



# or New Construction & Major Renovation Analysis

Yes ? No

Materials & Resources			13 Points
	Prereq 1	Storage & Collection of Recyclables	Required
	Credit 1.1	Building Reuse, Maintain 75% of Existing Walls, Floors & Roof	1
	Credit 1.2	Building Reuse, Maintain 100% of Existing Walls, Floors & Roof	1
	Credit 1.3	Building Reuse, Maintain 50% of Interior Non-Structural Elements	1
	Credit 2.1	Construction Waste Management, Divert 50% from Disposal	1
	Credit 2.2	Construction Waste Management, Divert 75% from Disposal	1
	Credit 3.1	Materials Reuse, 5%	1
	Credit 3.2	Materials Reuse, 10%	1
	Credit 4.1	Recycled Content, 10% (post-consumer + ½ pre-consumer)	1
	Credit 4.2	Recycled Content, 20% (post-consumer + ½ pre-consumer)	1
	Credit 5.1	Regional Materials, 10% Extracted, Processed & Manufactured Regionally	1
	Credit 5.2	Regional Materials, 20% Extracted, Processed & Manufactured Regionally	1
	Credit 6	Rapidly Renewable Materials	1
	Credit 7	Certified Wood	1

Yes ? No

Indoor Environmental Quality			15 Points
	Prereq 1	Minimum IAQ Performance	Required
	Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
	Credit 1	Outdoor Air Delivery Monitoring	1
	Credit 2	Increased Ventilation	1
	Credit 3.1	Construction IAQ Management Plan, During Construction	1
	Credit 3.2	Construction IAQ Management Plan, Before Occupancy	1
	Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1
	Credit 4.2	Low-Emitting Materials, Paints & Coatings	1
	Credit 4.3	Low-Emitting Materials, Carpet Systems	1
	Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber Products	1
	Credit 5	Indoor Chemical & Pollutant Source Control	1
	Credit 6.1	Controllability of Systems, Lighting	1
	Credit 6.2	Controllability of Systems, Thermal Comfort	1
	Credit 7.1	Thermal Comfort, Design	1
	Credit 7.2	Thermal Comfort, Verification	1
	Credit 8.1	Daylight & Views, Daylight 75% of Spaces	1
	Credit 8.2	Daylight & Views, Views for 90% of Spaces	1

Yes ? No

Innovation & Design Process			5 Points
	Credit 1.1	Innovation in Design: Provide Specific Title	1
	Credit 1.2	Innovation in Design: Provide Specific Title	1
	Credit 1.3	Innovation in Design: Provide Specific Title	1
	Credit 1.4	Innovation in Design: Provide Specific Title	1
	Credit 2	LEED® Accredited Professional	1

**Certified:** 26 to 32 points   **Silver:** 33 to 38 points   **Gold:** 39 to 51 points   **Platinum:** 52 to 69 points



## Indoor Environmental Quality

Credit 6.2 – Controllability of Systems (1 point)

*“Provide individual comfort controls for 50% (minimum) of the building occupants to enable adjustments to suit individual task needs and performance. Operable windows can be used in lieu of comfort controls...”*

Kalwall wall panels, curtainwalls and window replacement systems can have project-in, project-out and casement windows for fresh-air ventilation.



## Indoor Environmental Quality

Credit 8.1 – Daylight & Views – Daylight 75% of Spaces (1 point)

*“Demonstrate, through computer simulation, that a minimum daylight illumination level of 25 footcandles has been achieved in a minimum of 75% of all regularly occupied areas. Modeling must demonstrate 25 horizontal footcandles under clear sky conditions, at noon, on the equinox, at 30 inches above the floor.”*

A computerized daylight modeling analysis is available to assist in achieving proper footcandle levels within a building. The daylight simulation (RADIANCE) shows compliance with LEED daylighting requirements. Annual Daylight Autonomy levels can also be shown, using real-world weather files for project location. Both methods show the impact of daylight design on any building space. Visit [daylightmodeling.com](http://daylightmodeling.com)

## Indoor Environmental Quality

Credit 8.2 – Daylight and Views – Views for 90% of Spaces (1 point)

*“Achieve direct line-of-sight to the outdoor environment via vision glazing ... for building occupants in 90% of all regularly occupied areas.”*

Kalwall wall panels, curtainwalls and window replacement systems can easily and effectively integrate fixed and operable windows glazed with glass for connection to the outdoors. Skylights from Structures Unlimited, Inc. can integrate fixed-glass panels as well as operable roof systems for natural ventilation.



The Only Eco-Insulation for High-Performance Daylighting

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Kalwall Corporation, PO Box 237, Manchester, NH 03105 (800) 258-9777 • [kalwall.com](http://kalwall.com)  
Structures Unlimited, Inc., PO Box 5650, Manchester, NH 03108 (800) 225-3895 • [skylightinfo.com](http://skylightinfo.com)

## Is Kalwall a **green** product?

- ✓ Kalwall is listed in the GreenSpec® Directory.
- ✓ Kalwall panels and systems can be recycled. Aluminum recycling is part of our everyday life. FRP face sheets can also be recycled by grinding them up and using the resulting powder as filler in other FRP products such as: automobiles, boats, building panels, tubs and showers, engineered lumber, pultruded structural shapes, wall panels and concrete.
- ✓ Does not contain PVC which is not an environmentally friendly plastic.
- ✓ Insulation does not contain urea formaldehyde.
- ✓ Requires an absolute minimum of maintenance.



## Is Kalwall a **green** company?

- ✓ Kalwall recycles 100% of its aluminum scrap.
- ✓ Kalwall has significantly reduced VOC emissions by changing from a chromate primer to a water-based primer in its painting operation.
- ✓ Kalwall recycles acetone cleaners.
- ✓ Kalwall reuses water in its cooling process on the flat sheet line by using water chillers.
- ✓ Kalwall has several solar-heated/daylighted buildings.
- ✓ Kalwall allows no Environmental Tobacco Smoke (ETS) in its buildings. All buildings are designated non-smoking.
- ✓ Three manufacturing facilities are on the municipal bus route for employees who use public transportation.
- ✓ Kalwall practices building reuse.
- ✓ Kalwall has a heat recovery unit on its flat-sheet line.
- ✓ Kalwall preserves the natural surroundings at their facilities.
- ✓ Paper, cardboard and wood used in packaging can be recycled.
- ✓ Kalwall utilizes a thermal oxidizer for their FRP face sheet manufacturing process, virtually eliminating air pollutants associated with the process.



[www.usgbc.org](http://www.usgbc.org)

The site of the US Green Building Council. Administrators of the LEED green building rating system.

[www.buildinggreen.com](http://www.buildinggreen.com)

Publishers of Environmental Building News and the GreenSpec Directory.

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