



## Green Facade LEED v4 Credit Applications

**greenscreen**® considers environmental conservation, preservation and protection to be consistent with our overall corporate goals and values as well as an important consideration in our total business activities. It has been and will continue to be a critical **greenscreen**® policy to conduct business in an environmentally conscious manner that aims to reduce our impacts, conserve natural resources and provide maximum product transparency. As demonstration of our commitment to product transparency, **greenscreen**® is the first green wall manufacturer to complete the following transparency initiatives:

- Third party verified Health Product Declaration™ (HPD™)
- Third party verified ISO compliant 14040/14044 Life Cycle Assessment (LCA) model and report

From a corporate perspective, **greenscreen**® believes that it is important to identify and promote key initiatives that will help to bring about an awareness of the larger issues of sustainable design, green infrastructure and policy development. To this extent, we are in complete support of the USGBC's LEED® v4 for BD+C: New Construction Rating System (Nov. 2013) and will use it as discussion points to promote the incorporation of these standards into best building, management and policy development practices.

The **greenscreen**® modular, green facade/green wall trellis system is designed to be an adaptable building component that can contribute to solving multiple sustainable program requirements, such as improving energy efficiency, reducing urban heat island effects, increasing outdoor water efficiency and restoring native vegetation to constructed sites.

*The following is a list of possible credit contributions.*

### Sustainable Sites (SS) Credits

- Heat Island reduction  
Non-roof measures

- Use the existing plant material or install plants that provide shade over paving areas (including playgrounds) on the site within 10 years of planting. Install vegetated planters. Plants must be in place at the time of occupancy permit and cannot include artificial turf.
- Provide shade with vegetated structures.

*The incorporation of vegetation, shade structures and green facades to shade surfaces and cool the air in urban spaces has been used for hundreds of years. Green facade wall technology and **greenscreen**® can play a major role in helping to abate the Urban Heat Island Effect when used in combination with other vegetative technology such as urban forestry and green roofs. Additionally, **greenscreen**® can incorporate the use of deciduous plant material that allows for a summer cooling shading benefit and a winter heating, passive solar gain benefit.*



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### Water Efficiency (WE) Credits

- Outdoor water use reductions – Required
  - Option 1 - No irrigation required  
Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.  
OR
  - Option 2 - Reduced irrigation  
Reduce the project's landscape water requirement by at least 30% from the calculated baseline for the site's peak watering month. Reductions must be achieved through plant species selection and irrigation system efficiency, as calculated by the Environmental Protection Agency (EPA) WaterSense® Water Budget Tool.

*Native vines can play a large role in helping to increase coverage of the vegetated area to maximize point totals and make designed landscapes more layered, biologically diverse and sustaining. Native plants are typically more drought tolerant, disease resistant and are more conducive to an Integrated Pest Management (IPM) approach than introduced species and cultivars. For more information on plant material species selection, refer to the **greenscreen®** Guidelines for Green Facade Plant Selection.*

### Energy and Atmosphere (EA) Credits

- Minimum energy performance – Required
  - Option 1 - Whole-building energy simulation  
Demonstrate an improvement of 5% for new construction, 3% for major renovations, or 2% for core and shell projects in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1–2010, Appendix G, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.), using a simulation model.
- Optimize energy performance
  - Option 1 - Whole-building energy simulation (1–18 points except Schools and Healthcare, 1–16 points Schools, 1–20 points Healthcare)
    - Analyze efficiency measures during the design process and account for the results in design decision making. Use energy simulation of efficiency opportunities, past energy simulation analyses for similar buildings, or published data (e.g., Advanced Energy Design Guides) from analyses for similar buildings.
    - Analyze efficiency measures, focusing on load reduction and HVAC- related strategies (passive measures are acceptable) appropriate for the facility. Project potential energy savings and holistic project cost implications related to all affected systems.
    - Project teams pursuing the Integrative Process credit must complete the basic energy analysis for that credit before conducting the energy simulation.  
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- Follow the criteria in EA Prerequisite Minimum Energy Performance to demonstrate a percentage improvement in the proposed building performance rating compared with the baseline.

**greenscreen**® advocates for the use of green facade technology to be included under a fenestration definition as an external shading device in energy simulation models according to ANSI/ASHRAE/IESHA Standard 90.1-2010 Appendix G. To assist in the energy simulations, **greenscreen**® provides a full family of BIM nodes (Revit) which can be found on [www.greenscreen.com](http://www.greenscreen.com), Autodesk SEEK and CADdetails.

### Materials and Resources (MR) Credits

- Building product disclosure and optimization – environmental product declaration
  - Option 1 - Environmental Product Declaration (EPD) (1 point)  
Use at least 20 different permanently installed products sourced from at least five different manufacturers that meet one of the disclosure criteria below.
    - Product-specific declaration. Life Cycle Assessment Products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle to gate scope are valued as one quarter (1/4) of a product for the purposes of credit achievement calculation.

**greenscreen**® has completed an ISO Compliant, third party verified Life Cycle Assessment (LCA) model and report (2012). For more information or to obtain copies of the models and report, please contact Dean Hill, Director of Sustainability ([dean@greenscreen.com](mailto:dean@greenscreen.com)).

- Building product disclosure and optimization – material ingredients
  - Option 1 - Material ingredient reporting (1 point)  
Use at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm).
    - Health Product Declaration. The end use product has a published, complete Health Product Declaration with full disclosure of known hazards in compliance with the Health Product Declaration open Standard.

**greenscreen**® has completed a third party verified Health Product Declaration (HPD) to 1000 ppm complying with the HPD Collaborative v1. A copy of the HPD can be found on the HPD Collaborative database as well as on [www.greenscreen.com](http://www.greenscreen.com). For more information, please contact Dean Hill, Director of Sustainability ([dean@greenscreen.com](mailto:dean@greenscreen.com)).

- Building product disclosure and optimization – sourcing of raw materials
  - Option 2 - Leadership extraction practices (1 point)
    - Use products that meet at least one of the responsible extraction criteria below for at least 25%, by cost, of the total value of permanently installed building products in the project.  
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- Recycled content. Recycled content is the sum of postconsumer recycled content plus one-half the preconsumer recycled content, based on cost. Products meeting recycled content criteria are valued at 100% of their cost for the purposes of credit achievement calculation.

**greenscreen®** provides all of the necessary information regarding postconsumer and preconsumer recycle content for our products. For more information and cost calculations, refer to the **greenscreen®** Recycled Content Declaration or contact: Charlene Mortale. LEED AP BD+C: [charlene@greenscreen.com](mailto:charlene@greenscreen.com)

### RECYCLED MATERIALS CONTENT DECLARATION

LEED® v3 Credit 4

LEED® v4 Materials and Resources Credit MRc3

#### PANEL

Material	14 gauge, galvanized wire
Spec	ASTM A641
Supplier	Tree Island Industries
Process	basic oxygen furnace (BOF)/electric arc furnace (EAF)
Total Recycled Content	71.5%
Post-Consumer Content	47.5% of Material
Pre-Consumer/Post Industrial	24.0% of Material
Manufacturer	Impac International, Fontana, CA 92337

#### CLIPS/TRIM

Material	20 gauge, galvanized steel
Spec	ASTM A879
Supplier	Nucor Corporation
Process	electric arc furnace (EAF)
Total Recycled Content	84.8%
Post-Consumer Content	70.4%
Pre-Consumer/Post Industrial	14.4%
Manufacturer	Klein Metals, Altadena, CA 91001

#### POST

Material	3/8" thick, cold formed welded and seamless carbon steel structural tube
Spec	ASTM A500/A500B
Supplier	Searing Industries
Process	electric arc furnace (EAF)
Total Recycled Content	88.3%
Post-Consumer Content	56.9%
Pre-Consumer/Post Industrial	31.4%
Manufacturer	Toten Tubes, Azusa, CA 917



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### Innovation (IN) Credits

- LEED® Accredited Professional (possible 1 point)
  - At least one principal participant of the project team must be a LEED® Accredited Professional (AP) with a specialty appropriate for the project.

*greenscreen® has a LEED® AP BD+C professional on staff and can provide assistance with the incorporation of green facade technology as a specialty into LEED® certified projects.*

**For examples of LEED projects with which greenscreen® has been involved, please review the following list:**

<b>NY Botanical Garden</b>	ennead Associates Towers Golde (landscape)	Queens, NY	LEED Platinum
<b>CIRS</b>	Busby Perkins + Will PWL Partnership (landscape) Heatherbrae Contractors	W. Vancouver, BC	LEED Platinum
<b>Duke Farms</b>	R & R Pucci & Sons VITETTA Andropogon Associates	Philadelphia, PA	LEED Platinum
<b>TD Ameritrade</b>	HOK	Omaha, NE	LEED Platinum
<b>First Green Bank</b>	Environmental Dynamics Quercus Schmid Construction	Mt. Dora, FL	LEED Platinum
<b>PNC Net Zero Energy Branch</b>	Gensler Turner Construction Valley Crest	Ft. Lauderdale, FL	LEED Platinum
<b>Gray's Landing</b>	Ankrom Moisan Architects OTAK Walsh Construction M&M Construction Services	Portland, OR	LEED Platinum
<b>Solid Waste Authority of Palm Beach County Visitor Center</b>	Urban Associates CDM Smith Quality Metals	West Palm Beach, FL	LEED Platinum
<b>The Vanguard Chelsea</b>	SLCE Architects	New York, NY	LEED-EB Platinum
<b>Staten Island Courthouse</b>	ennead architects	Staten Island, NY	LEED Gold



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<b>Tempe Transportation Ctr.</b>	OTAK Architekton AE Dye Design (landscape)	Phoenix, AZ	LEED Gold
<b>Dunning Library</b>	Jackson Harlan, LLC Site Design Group (landscape) Stephens Pipe and Steel	Chicago, IL	LEED Gold
<b>Atlantic Central Bus Exp.</b>	Sierra Contracting	Seattle, WA	LEED Gold
<b>Fields Point W.T. Plant</b>	Daniel O'Connell's Sons	Providence, RI	LEED Gold
<b>Comer Reading Garden</b>	Lohan Anderson Fencemasters, Inc.	Chicago, IL	LEED Gold
<b>District 9 Headquarters</b>	Paul Murdoch Architects Pamela Burton and Co. CTP Construction	Los Angeles, CA	LEED Gold
<b>U.S. Coast Guard HQ</b>	WDG Architecture HOK McKissak & McKissak Clark Construction Premier Consultants Intl. Inc.	Washington, DC	LEED Gold
<b>FAU Innovation Village</b>	PGAL Capstone/Balfour Beatty Skyline Steel	Boca Raton, FL	LEED Gold
<b>Max Planck Florida Research Institute</b>	PGAL ZGF Skyline Steel	Jupiter, FL	LEED Gold
<b>Highland Green</b>	Design Plus Architects Putney Architecture Potter General Contracting	Louisville, KY	LEED Gold
<b>Pico Rivera Library</b>	Carde Ten Architects PW Construction Inc. Zinner Consultants	Los Angeles, CA	LEED Gold
<b>Skokie First Bank &amp; Trust</b>	Behles+Behles Knudsen Construction	Skokie, IL	LEED Gold
<b>Rush University Medical Center Tower</b>	Perkins+Will Power/Jacobs Joint Venture Hitchcock Design Group Hoerr Schaudt	Chicago, IL	LEED Gold



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<b>Mercy Housing and St. Anthony's Foundation</b>	HKIT Architects RHAA Landscape Architects	San Francisco, CA	LEED Gold
<b>Emerson College LA Center</b>	mOrphosis Architects Hathaway Dinwiddie Const. Cimco Sheet Metal	Los Angeles, CA	LEED Gold
<b>Moffet Place</b>	DES Architects and Engineers Jay Paul Co. Level 10 Construction	Sunnyvale, CA	LEED Gold
<b>Sarpy County LEC</b>	Morrissey Engineering Carlson West Povondra	Papillion, NE	LEED Silver
<b>C41SR Center of Excellence Aberdeen Proving Grounds</b>	SOM Tompkins Turner - Grunley/Kinsley Joint Venture Century Fence	Aberdeen, MD	LEED Silver
<b>U. S. Census Bureau</b>	SOM HKS Architects Mayhan Rykiel Associates Skanska Manufab	Suitland, MD	LEED Silver
<b>Tesla Treatment Facility</b>	Stantec/PCL Contractors	Tracy, CA	LEED Silver
<b>University of Michigan Institute for Social Research</b>	Lord-Aeck-Sargent	Ann Arbor, MI	LEED Silver
<b>Edgewater Library</b>	Lohan Anderson Architects Burling Builders, Inc.	Chicago, IL	LEED Silver
<b>Irwin Army Comm. Hospital Replacement Facility</b>	Leo A Daly RLF Architects Valley Crest	Fort Riley, KS	LEED Silver
<b>Whole Foods (Shoppes at Kingsbury)</b>	Gensler Mark Cavagnero Associates Wolff Landscape Architecture Bentley Const. Corp.	Chicago, IL	LEED Certified
<b>Premier Auto Group Headquarters</b>	LPA Inc. Koll Construction	Irvine, CA	LEED Certified