



TRENWYTH

an Oldcastle® company

# Naturally Green™

## The L.E.E.D. Green Building Rating System®

At Trenwyth, we are constantly bringing you new products that contribute to your Green Building efforts. We are committed to providing you with premium recycled products that give you the design flexibility you need to express yourself creatively and deliver exceptional solutions.

This brochure defines such terms as “green building”, “sustainable design” and the “L.E.E.D. Green Building Rating System®”. It illustrates how L.E.E.D. points may be achieved and how Trenwyth products may contribute points toward the L.E.E.D. Rating System.

### *Trenwyth's high-end architectural Masonry Units Are Naturally “Green”.*

- Durable materials
- Low-maintenance building materials
- Low-embodied energy building materials
- Regionally-produced materials
- Regionally-extracted materials
- Building product containing recycled content
- Sound-absorbing building materials

TRENWYTH INDUSTRIES is the leader in high-end pre-finished architectural concrete masonry units. With manufacturing facilities nationwide, Trenwyth ensures the highest quality products through the control of the entire manufacturing process from the manufacture of its own raw blocks to the production of its own prefacing and pre-finishing components. For more information, visit Trenwyth at [www.trenwyth.com](http://www.trenwyth.com) or call 1-800-233-1924.



In 1995, the U.S. Green Building Council (USGBC), a Washington, D.C.-based coalition representing the building industry, established the L.E.E.D. Green Building Rating System® to accelerate the development and implementation of “green design”.

**WHAT IS GREEN DESIGN?** Green Design involves design and construction practices that significantly reduce or eliminate the negative impact of buildings on the environment and on its occupants.

In the United States, more than 1.7 million acres of land are developed annually. Building operations account for more than 40% of total energy use and atmospheric emissions. They consume more than 25% of all wood and raw materials, 50% of all potable water and create 150 million tons of municipal solid waste. That's 40% ... or 3 billion tons annually ... of raw materials used globally!

*The Goal of Green Design is to Create  
High Performance Environments,  
Commonly Referred to as “Sustainable Design”.*

**BUILDINGS ARE MAKING US SICK.** In the 1980's, the “sick building” concept emerged and concern for worker health and productivity became an issue. The impact of building operations on individual health and employee satisfaction is significant as occupants spend nearly 90% of their time indoors. According to the U.S. EPA Office of Air and Radiation, indoor air quality can be two to five times worse than outdoor air quality. Green design enhances occupant comfort and health, yielding reduced absenteeism and turnover, improved employee satisfaction and valuable gains in labor productivity, sales, manufacturing quality and output. In schools, too, studies have shown that student performance is markedly better in schools built according to green design principles.

*67% are Willing to Pay Up to 10%  
More for Environmentally Friendly Products*

**GREEN DESIGN LEADS TO GREEN SAVINGS.** Green buildings can potentially reduce project costs by achieving synergies between disciplines and the technologies required to develop a building. The USGBC challenged itself to develop a system with which to rate the performance of the building over its lifecycle. The acronym for that rating system is “L.E.E.D.”.

**WHAT IS L.E.E.D.?** L.E.E.D., which stands for Leadership in Energy and Environmental Design, is a voluntary, market-driven, self-assessing system designed to rate new and existing commercial, institutional and high-rise residential buildings. The system evaluates environmental performance from a “whole building” perspective over the lifecycle of the facility and provides guidelines for what constitutes a “Green Building”.

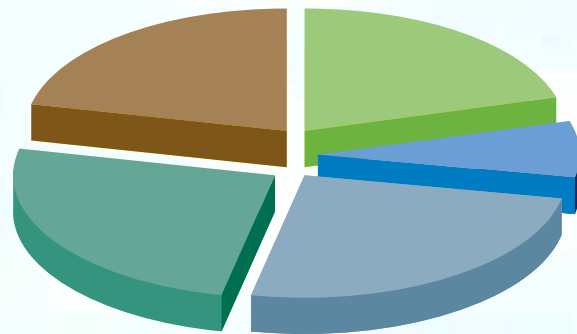
*L.E.E.D. points are awarded to buildings ... not individuals.*

**HOW DOES A BUILDING BECOME L.E.E.D. CERTIFIED?** There are several levels that a building can achieve during the certification process. A building qualifies for each certification level by achieving the L.E.E.D. points assigned to that level.

Certification Levels	Points
L.E.E.D. Certified	26 – 32 points
Silver Level	33 – 38 points
Gold Level	39 – 51 points
Platinum Level	52+ points (out of a possible 69 points)

**HOW ARE L.E.E.D. POINTS CATEGORIZED?** The environmental performance of a building is based on specific design and construction practices. The design and construction of a building is broken down into five categories. Each category is allotted a percentage of credit points based on its value to the building’s overall design and construction.

L.E.E.D. Point Category	Certification Points
Sustainable Sites	22% or 14 points
Water Efficiency	8% or 5 points
Energy & Atmosphere	27% or 17 points
Materials & Resources	27% or 17 points
Indoor Environmental Quality	23% or 15 points



■ Sustainable Sites   
 ■ Water Efficiency   
 ■ Energy & Atmosphere  
■ Materials & Resources   
 ■ Indoor Environmental Quality

Extra credit may be achieved through project design innovation.

*According to 62% of Design Professionals Surveyed,  
the Number of Environmental Projects will  
Increase in the Next 3-5 Years.*



# WHAT DOES EACH OF THE FIVE (5) L.E.E.D. CATEGORIES ENCOMPASS?

## I. SUSTAINABLE SITES

**PURPOSE:** Reduce the negative impact caused by the construction process and improve the quality of the previously contaminated site.

**CREDITS:** Site selection  
Urban redevelopment  
Rehabilitating brown fields (contaminated sites)  
Alternative transportation programs  
Reduced site disturbance  
Storm water management  
Light pollution reduction  
Landscape and exterior design to reduce heat islands\*  
\* Heat islands absorb and radiate heat to surrounding areas.

## II. WATER EFFICIENCY

**PURPOSE:** Lower the burden on municipal water supplies and waste water systems by reducing the amount of potable (fresh) water for landscape irrigation, reducing the generation of wastewater and maximizing water efficiency within buildings.

**CREDITS:** Water efficiency  
Innovative wastewater technologies  
Water use reduction

## III. ENERGY AND ATMOSPHERE

**PURPOSE:** Dramatic reduction in the use of energy consumption.

**CREDITS:** Optimal energy performance  
Renewable energy  
Additional commissioning (all building systems perform interactively)  
Elimination of hydrochlorofluorocarbons (HCFC's) and halons  
Measurement and verification  
Use of green power

## IV. MATERIAL AND RESOURCES

**PURPOSE:** (1) Reduce the amount of waste material (landfills/incinerators). (2) Reduce the amount of non-renewable natural resources in constructing and operating buildings.

**CREDITS:** Re-use of salvaged/refurbished materials  
Use of locally/regionally-manufactured materials  
Use of those materials that rapidly replenish themselves  
Use of a minimum of 50% certified wood-based materials  
Construction waste management  
Recycled content

## V. INDOOR ENVIRONMENTAL QUALITY

**PURPOSE:** The first four credits relate to indoor air quality; the final three relate to the overall occupant comfort and well-being.

**CREDITS:** Carbon dioxide monitoring  
Increase ventilation effectiveness  
Indoor chemical and pollution source control  
Construction IAQ management plan  
Controllability of systems  
Thermal comfort  
Daylight and views

### Sources:

- U.S. Green Building Council website @ [www.usgbc.org](http://www.usgbc.org)
- U.S. Green Building Council's presentation: "An Introduction to the U.S. Green Building Council and the L.E.E.D.™ Green Building Rating System", Copyright 2003.
- U.S. Federal Trade Commission Guides for the Use of Environmental Marketing Claims, FTC website @ [www.ftc.gov](http://www.ftc.gov)
- Tandus Executive Summary @ [www.tandus.com](http://www.tandus.com)
- U.S. EPA Office of Air and Radiation, 12989, "Report to Congress on Indoor Air Quality, Volume II: Assessment and Control of Indoor Air Pollution".
- Nicklas and Bailey, "Analysis of the Performance of Students in Daylit Schools," Innovative Design, Raleigh, NC, [www.innovativedesign.net](http://www.innovativedesign.net).
- Hathaway, Hargreaves, Thompson, and Novitsky, 1992, "A Study Into the Effects of Light on Children of Elementary School Age – a Case of Daylight Robbery," Policy and Planning Branch, Planning and Information Services Division, Alberta Education, Canada.

**HOW IS RECYCLED CONTENT VALUE DETERMINED?** The Recycled Content Value is the sum of the building material cost multiplied by the percentage of post-consumer recycled content plus one-half of the percentage of post-industrial recycled content, as illustrated in the chart below.

Building Material	Cost	x	% Post-Consumer	+	1/2 of % Post-Industrial Recycled Content	=	Recycled Content Value
#1	\$200,000	x	7%	+	1/2 of 38%	=	26% or \$52,000
#2	\$350,000	x	22%	+	1/2 of 46%	=	45% or \$157,500
#3	\$65,000	x	0%	+	1/2 of 16%	=	8% or \$5,200
<b>TOTAL</b>	<b>\$615,000</b>						<b>Total Recycled Material Costs = \$214,700</b>

\* The Percentage of Total Recycled Material Cost for the Project is 35% of the Total Materials Cost for the project. Therefore, the project Earned 1 L.E.E.D. Certification Point as the Percentage of Total Recycled Material Cost for the Project exceeds the 10% threshold. (illustrated below).

Total Cost of Recycled Materials	÷	Total Material Cost	=	Percentage of Total Recycled Material Cost for Project
\$214,700	÷	\$615,000	=	35%

# trenwyth industries

**WHICH TRENWYTH PRODUCTS CONTAIN RECYCLED CONTENT?** A building may earn points under the L.E.E.D. Materials and Resources Category by incorporating one or more of the following Trenwyth high-end architectural concrete masonry units into the design plan:

- Astra-Glaze-SW+® glazed masonry units
- Astra-Glaze-SW+®/Acousta-Wal sound-absorbing glazed masonry units
- Astra-Glaze-SW+® Platinum premium glazed masonry units
- Astra-Glaze-SW+® Platinum/Acousta-Wal sound-absorbing premium glazed masonry units
- Verastone™ premium recycled ground faced masonry units
- Verastone™/Acousta-Wal sound-absorbing premium recycled ground faced masonry units

When designing with any of the above Trenwyth products, your building may earn L.E.E.D. points as follows:

**L.E.E.D.-NC (FOR NEW CONSTRUCTION & MAJOR RENOVATIONS)**

Credit #	Credit	Credit Description *	Points
4.1	Recycled Content	5% (post-consumer + 1/2 post-industrial)	1
4.2	Recycled Content	10% (post-consumer + 1/2 post-industrial)	1

If **10% Recycled Content under Credit 4.2** is achieved, the building earns 2 points because it achieves the initial requirement of 5% under Credit 4.1, as well as 10% under Credit 4.2.

5.1	Local/Regional Materials	20% recycled material manufactured regionally within a 500 mile radius	1
5.2	Local/Regional Material	50% extracted, harvested or recovered regionally within a 500 mile radius	1

\* Percentage of the total value of the materials used in the project.

Therefore, **A BUILDING COULD POTENTIALLY EARN A TOTAL OF FOUR (4) RECYCLED CONTENT CERTIFICATION POINTS** if the recycled content is at least 10% of the total material cost of the project and the material is both extracted and manufactured within a 500 mile radius.