

Basics of Sustainability & LEED Design

What is Sustainability?

Original Definition

"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Bruntland Report for the World Commission on Environment and Development (1992)

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Basics of Sustainability & LEED Design

What is Sustainability?

Newer Definition

"A sustainable future is one in which a healthy environment, economic prosperity and social justice are pursued simultaneously to ensure the well-being and quality of life of present and future generations."

Learning for a Sustainable Future - Teacher Centre

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Basics of Sustainability & LEED Design

What is Sustainability?

"Living in such a way so as to meet the needs of the present without compromising the ability of future generations to meet the needs of the future."

- Sustainability Is a Social, Environmental, and Economic Concept

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What is Sustainability?

“Living in such a way so as to meet the needs of the present without compromising the ability of future generations to meet the needs of the future.”

- Sustainability Is a Social, Environmental, and Economic Concept
- Concept Goes Beyond a Single Building

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Basics of Sustainability & LEED Design

What is Sustainability?

“Living in such a way so as to meet the needs of the present without compromising the ability of future generations to meet the needs of the future.”

- Sustainability Is a Social, Environmental, and Economic Concept
- Concept Goes Beyond a Single Building
- Sometimes Used Interchangeably With “Green” or “Environmentally Friendly”

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What is Sustainability?

- Sustainably Designed Building Sometimes Referred to as “High Performance Building”
- High Performance Building Usually Performs Substantially Better Than a Standard One
 - Energy
 - Economically
 - Environmentally

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Basics of Sustainability & LEED Design

Basics of Sustainability

- On a Broader Scale It Means Buildings That:
 - Utilize Green Power to Greatest Extent Possible:
 - ✓ Buying Renewable Energy Certificates (RECs)
 - ✓ Wind, Wave, Tidal, and Small Scale Hydropower
 - ✓ Biomass
 - ✓ Landfill Gas
 - ✓ Geothermal
 - ✓ Solar

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Basics of Sustainability & LEED Design

Basics of Sustainability

- On a Broader Scale It Means Buildings That:
 - Conserve Through Reduced Use of Water:
 - ✓ Landscaping and Irrigation
 - ✓ Sanitary Fixtures
 - ✓ Boiler & Hot Water Systems
 - ✓ Single-Pass Equipment Cooling
 - ✓ Cooling Tower Management
 - ✓ Commercial Kitchen Equipment
 - ✓ Steam Sterilizers, Reverse Osmosis, Etc.

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Basics of Sustainability

- On a Broader Scale It Means Buildings That:
 - Divert Waste To The Greatest Extent Possible:
 - ✓ Source Reduction
 - ✓ Recycling, Reuse, or Composting
 - ✓ Construction & Demolition Waste Management

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Basics of Sustainability

- On a Broader Scale It Means Buildings That:
 - Better Manage Stormwater Through Use of Best Practices Such As:
 - ✓ Bioretention Cells
 - ✓ Elimination of Curb & Gutters
 - ✓ Grassed Swales
 - ✓ Infiltration Trenches, Inlet Protection Devices
 - ✓ Permeable Pavement & Pavers
 - ✓ Rain Barrels & Cisterns

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Basics of Sustainability & LEED Design

Using LEED to Demonstrate Sustainability

- LEED = Leadership in Energy & Environmental Design
 - Voluntary, Consensus-based, Market-driven

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Basics of Sustainability & LEED Design

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 - Based on Existing & Proven Technology

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Basics of Sustainability & LEED Design

Using LEED to Demonstrate Sustainability

- **LEED = Leadership in Energy & Environmental Design**
 - *Voluntary, Consensus-based, Market-driven*
 - *Based on Existing & Proven Technology*
 - *Evaluates Environmental Performance From a Whole-building Perspective Over Building's Life Cycle*

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Basics of Sustainability & LEED Design

Using LEED to Demonstrate Sustainability

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 - *Voluntary, Consensus-based, Market-driven*
 - *Based on Existing & Proven Technology*
 - *Evaluates Environmental Performance From a Whole-building Perspective Over Building's Life Cycle*
 - *Definitive Standard for What Constitutes Sustainable Design, Construction, & Operation*

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Basics of Sustainability & LEED Design

Using LEED to Demonstrate Sustainability

- **LEED = Leadership in Energy & Environmental Design**
 - *Used for Rating New & Existing Commercial, Institutional, & Residential Buildings*

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Basics of Sustainability & LEED Design

Using LEED to Demonstrate Sustainability

- **LEED = Leadership in Energy & Environmental Design**
 - *Used for Rating New & Existing Commercial, Institutional, & Residential Buildings*
 - *Based on Accepted Energy & Environmental Principles*

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Basics of Sustainability & LEED Design

Using LEED to Demonstrate Sustainability

- **LEED = Leadership in Energy & Environmental Design**
 - *Used for Rating New & Existing Commercial, Institutional, & Residential Buildings*
 - *Based on Accepted Energy & Environmental Principles*
 - *Strikes Balance Between Established Practices & Emerging Concepts*

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Basics of Sustainability & LEED Design

Using LEED to Demonstrate Sustainability

- **LEED = Leadership in Energy & Environmental Design Categories**
 - *Sustainable Sites*
 - *Water Efficiency*
 - *Energy and Atmosphere*
 - *Materials and Resources*
 - *Indoor Environmental Quality*
 - *Innovation in Design*
 - *Regional Bonus Points*

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Using LEED to Demonstrate Sustainability

- **Categories Contain Prerequisites & Credits**
 - *Prerequisites are Mandatory Requirements*
 - *Must Achieve ALL Prerequisites to Quality*
 - *Credits Achieved Determines Level of Certification*
 - **Levels of Certification:**
 - ✓ *40-49 Points Certified*
 - ✓ *50-59 Points Silver*
 - ✓ *60-79 Points Gold*
 - ✓ *80 Points & Higher Platinum*

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Using LEED to Demonstrate Sustainability

- **Some LEED Statistics to Consider:**
 - *Nearly 68,600 Certified Commercial Projects*
 - *More Than 1,400 Certified K-12 Projects*
 - *More Than 3,050 Certified Higher Education Projects*
 - *More Than 620 Certified State Government Projects*
 - *More Than 1,930 Certified Local Government Projects*

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LEED for New Construction 2009
System Currently in Use-Sunsets October 2016



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**LEED Version 4 Launched November 2013
Will Be Mandatory November 2016**



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**LEED Version 4
But First A Word From Our Sponsor...**

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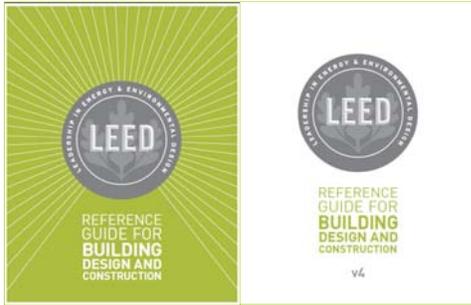
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LEED Version 4 Project Checklist



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Connecticut High Performance Buildings Requirements and Sustainability

- Applies to State-Funded Buildings
- Requires State-Funded Buildings to be Built Using a High Performance Building Standard
- Similar to LEED But Without Reporting Requirements and Registration
- Includes Mandatory Requirements and Optional Strategies

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Connecticut High Performance Buildings Requirements and Sustainability

- **Compliance Manual Updated September 2011**
 - > Detailed Descriptions of Requirements and Strategies
 - > Compliance Checklists for State Facilities and Schools
 - > High Performance Buildings Glossary

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Resources You Can Use

- **LEEDUser Subscription Service**
<http://www.leaduser.com/>
- **The Integrative Design Guide to Green Building**
7group and Bill Reed / John Wiley & Sons - 2009
- **The HOK Guidebook to Sustainable Design – 2nd Ed.**
Mendler & Odell / John Wiley & Sons - 2005
- **Sustainable Commercial Interiors**
Penny Bonda & Katie Sosnowchik / Wiley & Sons-2014
- **Sustainable Design: Architecture, Planning, & Ecology**
Daniel Williams / John Wiley & Sons - 2007

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Basics of Sustainability & LEED Design

Review And Summary

- What is Sustainability?
- The Basics of Sustainability
- How Using the LEED Green Building Rating System Can Demonstrate a Project's Sustainability
- How the Connecticut High Performance Buildings Requirements Furthers a Project's Sustainability Goals
- Resources You Can Use

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Thank You For Attending Today and Keep Working
Toward a Greener Future!

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