

LEED Existing Buildings

Bob Swanger, LEED AP
Vice President
Harris Companies

Agenda

- What is “GREEN”
- What is LEED?
- Why LEED?
- How do I get started?
- Questions

What is GREEN?



It's a BIG topic!

3/31/08

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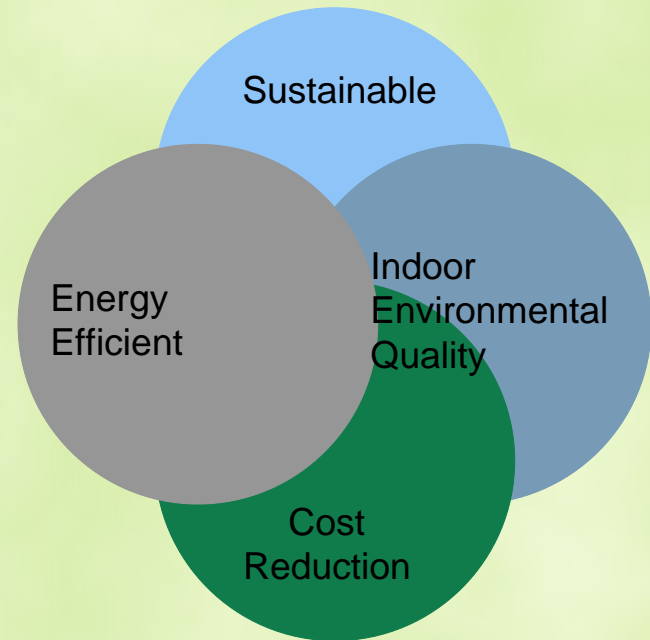
What is GREEN?

- **The “GREEN”
Movement**

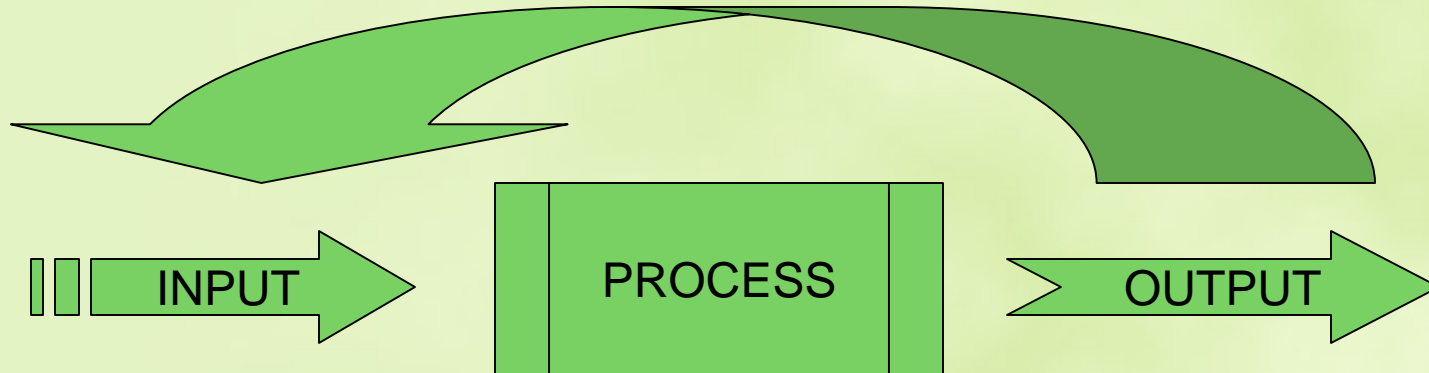
- **Sustainability**

“Providing for the needs of the present without detracting from the ability to fulfill the needs of the future”

- ASHRAE
GreenGuide



What is GREEN?



Utilities

Gas, Electric, Water

Consumables

Paper, Pencils, Supplies,
Food, Raw Materials, etc...

Durable Goods

Carpet, Construction Materials,
Office Equipment

Business Operations

Recycling, Teleconferencing, etc.

Facility Management

Energy Management, Maintenance,
Repairs, Building Operation,
Cleaning, Pest Control, etc.

Purchasing

Consumables, Durable Goods,
Raw Materials, etc.

Personal Productivity

Indoor Environmental Quality

Re-Use

“Use Waste as Input”

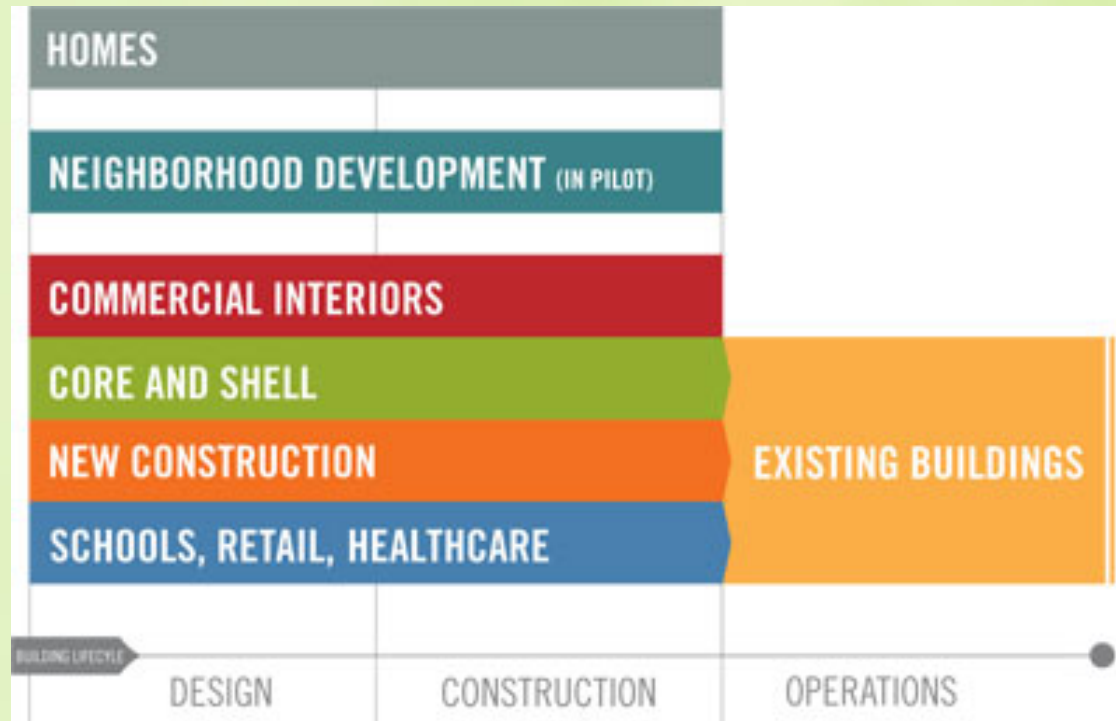
Lower Overall Cost

Lower Environmental Impact

What is LEED?

- US Green Building Council's (USGBC) green building rating system
- Leadership in **E**nergy & **E**nvironmental **D**esign
- Set the standard for...
 - Site Development (Sustainable Sites)
 - Water Savings (Water Efficiency)
 - Energy Efficiency (Energy & Atmosphere)
 - Material Selection (Materials & Resources)
 - Indoor Air Quality (Indoor Environmental Quality)

What is LEED?



LEED is the nationally accepted benchmark for the design, construction, and operation of high-performance green buildings.

What is LEED?

- “LEED was developed because the building industry lacked a coherent definition of what “green” was. The LEED rating system provides the building industry with consistent, credible standards for what constitutes a green building, and has become the nationally accepted benchmark for the design, construction and operation of high-performance green buildings.”

- Rick Ferizzi, CEO & President of the USGBC

What is LEED?

- Certify buildings via an extensive point rating system
 - Verify pre-requisites are met
 - Verify credits are earned
- Accredit professionals (LEED AP) that demonstrate professional competency in understanding high performance green buildings and the LEED rating system.

What is LEED?

- LEED EB Operation & Maintenance 2008
 - Certification designation for existing buildings
 - Certification is based upon actual operating performance, not design expectations.
 - Provides a roadmap for property managers, portfolio owners, and service providers who wish to drive down operating costs while increasing occupant's productivity in an environmentally responsible manner

What is LEED?

- Possible Points (LEED EB O&M 2008)
 - Sustainable Sites (12)
 - Water Efficiency (10)
 - Energy & Atmosphere (30)
 - Materials & Resources (14)
 - Indoor Environmental Quality (19)
 - Innovations in Operation (7)
- Building certification designations (LEED EB O&M 2008)
 - 34-42 Points = Certified
 - 43-50 Points = Silver
 - 51-67 Points = Gold
 - 68-92 Points = Platinum

Why LEED?

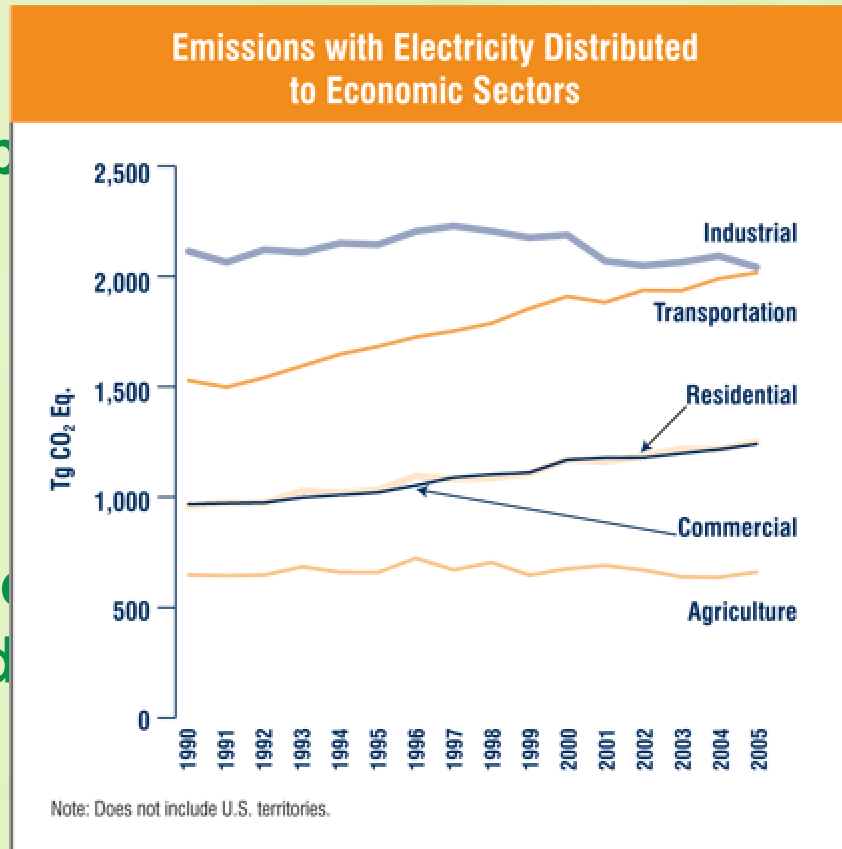


Why LEED?

Is "Global
change

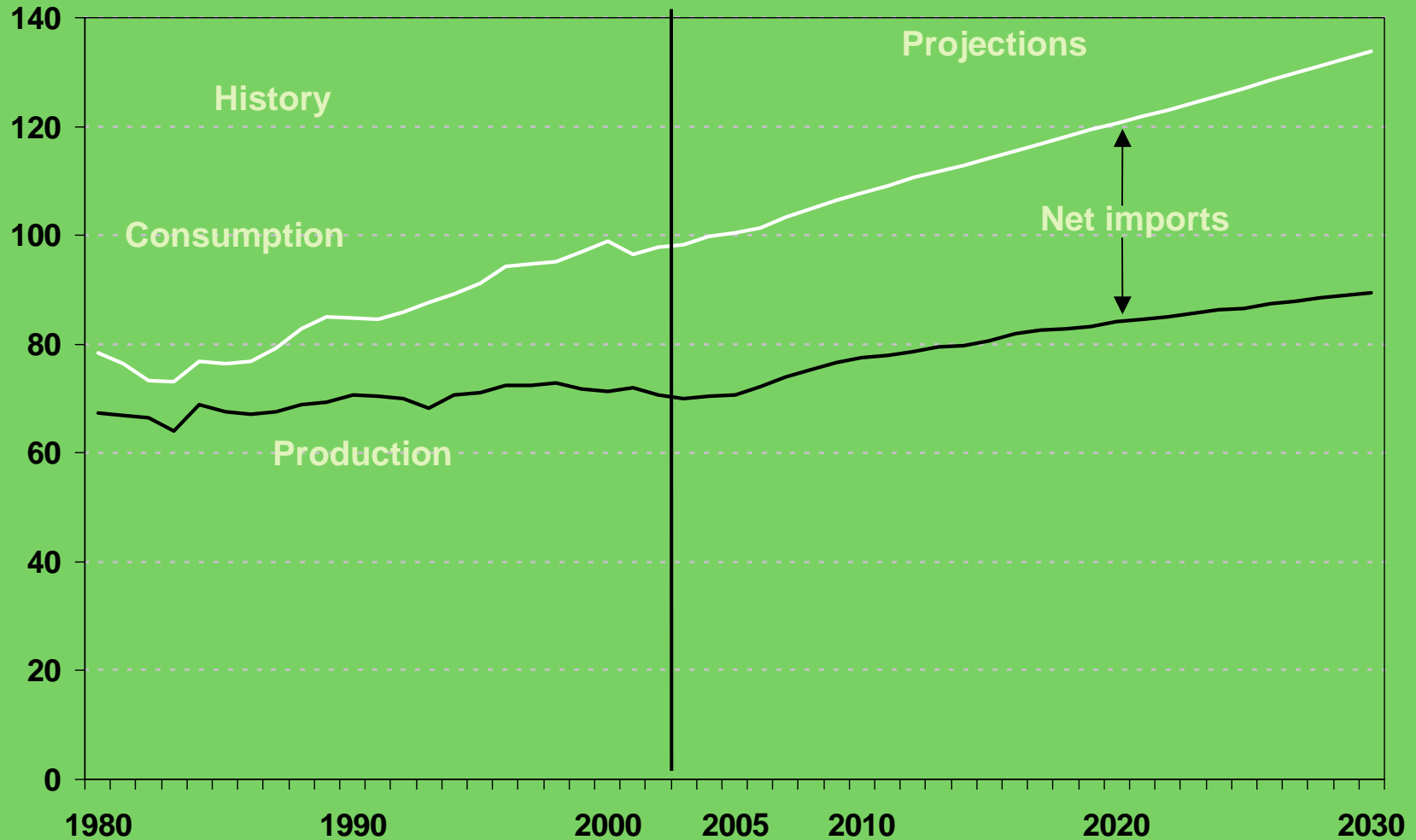
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Who
to d



Total Energy Production and Consumption, 1980-2030

quadrillion Btu



Why LEED?

- **Water**
 - 1% is potable
 - 2% is frozen
 - 97% is salt water

² US Geological Service




Why LEED?

- **4.9 million Commercial Buildings covered 72 billion square feet in 2003**
 - **By 2025 it is expected to exceed 105 billion square feet**
 - **Consume 18% of all energy in the US**
 - **Lighting & Indoor Climate Control consume 59% of commercial primary energy use**
 - **Consume 12% of potable water in the US**
 - **88% used for sanitary, landscaping, heating & cooling**

Why LEED?

- **From 2005 to 2030...**
 - **Electricity Sales Increase 41%**
 - **Electricity Demand in the Commercial Sector is forecasted to increase 63%**
 - **Growth in Population and Disposable Income Drive Demand**
 - **Products**
 - **Services**
 - **“Space”**
- ***EIA, Annual Energy Outlook 2007 Report***





“The growth in demand for electricity is expected to be potentially offset by efficiency gains in both the residential and commercial sectors, and higher energy prices are expected to encourage investment in energy-efficient equipment”

-EIA, Annual Energy Outlook 2007

Why LEED?

- **Everyone is talking about**
 - **“Green”, Clean Energy, NZEBs, LEED, Global Warming, Energy Dependence, Sustainability, Carbon Credits, etc..**
- **if it's true...**
 - **Energy Independence is important and patriotic**
 - **Vital interest to businesses that want to remain competitive**
 - **“Energy Revolution” will be bigger than the “Industrial Revolution”**

Why LEED?

“I recognize the right and duty of this generation to develop and use the natural resources of our land, but I do not recognize the right to waste them, or to rob, by wasteful use, the generations that come after us”

-President Theodore Roosevelt, 1910

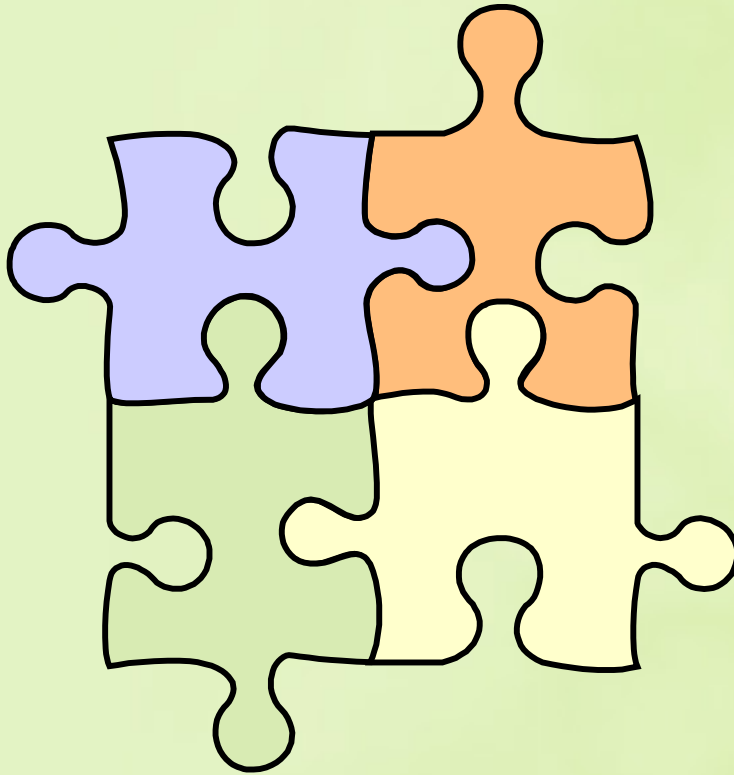


How do I get started?

Where are you today?



How do I get started?



1. Pre-Qualification
2. Pre-Certification
3. Registration
4. Implementation
5. Certification
6. Measurement & Verification

How do I get started?

- Determine who will lead the effort?
 - Internal leaders
 - External Consultants
- Commitment of internal stakeholders
 - Time
 - Budget
 - Organizational Impact

Pre-Qualification

- Determine why you want certification
- Preliminary site survey
- Preliminary interviews
- Assessment of capacity to become certified
 - Meet minimum qualifications
- Develop expectations of timeline, budget, and performance standards
- Determine level of certification

Pre-Qualification

LEED for Existing Buildings: Operations & Maintenance 2008 - Minimum Requirements

The building must be fully occupied for at least (12) consecutive months preceding certification application

Scope of certification must include 100% of total floor area of the building.

The building must be in compliance with federal, state, and local environmental laws and regulations, including but not limited to those pertaining to asbestos, PCBs, water discharge, and waste management.

The building must meet the prerequisites from the LEED EB-O&M 2008 rating system

Pre-Qualification

LEED for Existing Buildings: Operations & Maintenance 2008 - Prerequisites

Water Efficiency Prerequisite 1: Minimum Indoor Plumbing Fixture and Fitting Efficiency

Energy & Atmosphere Prerequisite 1: Energy Efficiency Best Management Practices – Planning, Documentation, and Opportunity Assessment

Energy & Atmosphere Prerequisite 2: Minimum Energy Efficiency Performance

Energy & Atmosphere Prerequisite 3: Refrigerant Management – Ozone Protection

Pre-Qualification

LEED for Existing Buildings: Operations & Maintenance 2008 - Prerequisites

Materials and Resources Prerequisite 1: Sustainable Purchasing Policy

Materials and Resources Prerequisite 2: Solid Waste Management Policy

Indoor Environmental Quality Prerequisite 1: Outdoor Air Introduction and Exhaust Systems

Indoor Environmental Quality Prerequisite 2: Environmental Tobacco Smoke (ETS) Control

Indoor Environmental Quality Prerequisite 3: Green Cleaning Policy

Pre-Certification

- Finalize cost of Certification
- Finalize level of Certification
- Approval of Budgets
- Establish timeline
- Determine Performance Period
- Fund Registration
- Identify implementation measures, timelines, and fund budgets

Registration

- Register the certification project with the USGBC
 - \$450 Members of the USGBC
 - \$600 Non-Members of the USGBC

Implementation

- Prioritize and implement all initiatives, projects, and process changes to coincide with the performance period

Certification

- Verify that all implementation measures comply with the intent of the credits
- Measure all improvement initiatives during the performance period
- Document all implementation measures per the USGBC standards for final certification
- The level of documentation and record keeping are extensive and must be a priority during the entire process.

Certification

- File for certification with the USGBC
 - < 50,000 Ft²
 - \$1,250.00 (USGBC Members)
 - \$1,500 (non-USGBC Members)
 - 50,000-500,000 Ft²
 - \$0.025/Ft² (USGBC Members)
 - \$0.03/Ft² (non-USGBC Members)
 - >500,000
 - \$12,500 (USGBC Members)
 - \$15,000 (non-USGBC Members)

Measurement & Verification

- Provide an on-going comprehensive process for maintaining, documenting, and measuring the improvements made during the certification process and continue the improvement process.

Questions

