Busting the Myth that Green Costs More Green

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Presentation Overview

- Introduction and Overview
- Costs
  - Importance and Perceptions
  - USGBC Goals
  - LEED® Process and Implementation
- High-Performance Buildings and the Business Case
  - Benefits
  - Quantitative and Qualitative Examples
  - Life Cycle Assessment and Total Cost of Ownership
- Cost Studies
  - State of California Cost Study, 2003
  - General Services Administration LEED® Cost Study, 2004
  - Davis Langdon Cost Study, Cost of Green Revisited
  - Greening America's Schools Cost and Benefits Analysis

Introduction and Overview

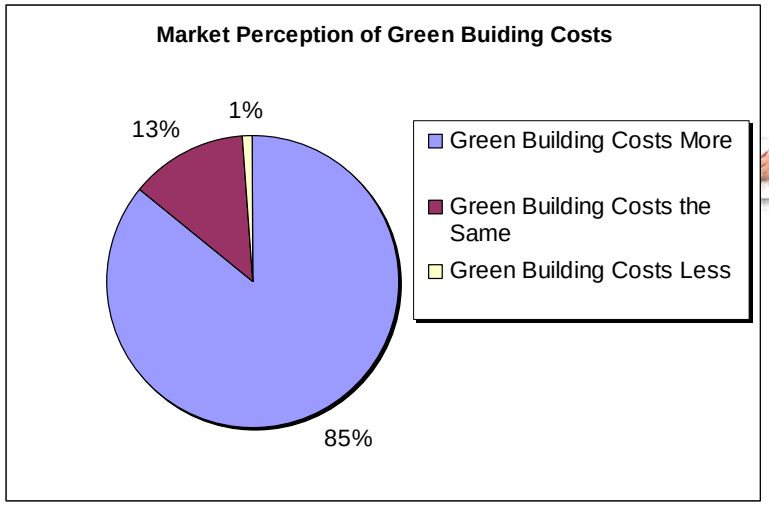
- Buildings are one of the largest consumers of resources and energy in this country and are responsible for almost half of all carbon emissions in the United States
- Americans spend nearly 90 percent of their lives indoors
- The most common misconception about green building is related to cost
- According to many studies, LEED does not have to cost a penny more
- First cost is only a small part of the total cost of building ownership
- Any additional costs for building green are recouped in one to two years on average

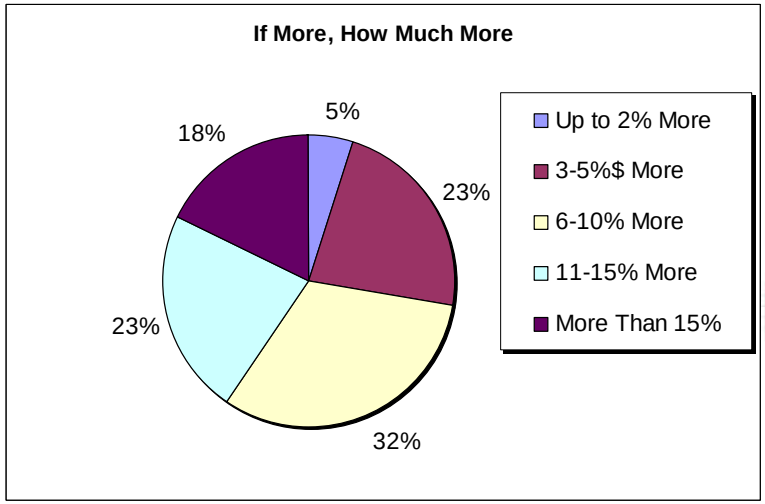
Costs

- Always important
- Drives project goals and strategies
- When to begin considering costs?
- First vs. Life Cycle
- Chasing LEED points or pursuing integrated design?
- Perceptions

Costs

- Perceptions
  - 85% Believe LEED adds cost to projects
  - Of those, nearly 75% believe LEED costs adds more than 6% to project budgets





Source: BD+C Green Building Survey 08/07, © Reed Business Information

Origins of These Beliefs

- Lack of project experience
- Antiquated approach to design and construction
- Green considered and additive feature

USGBC Goals

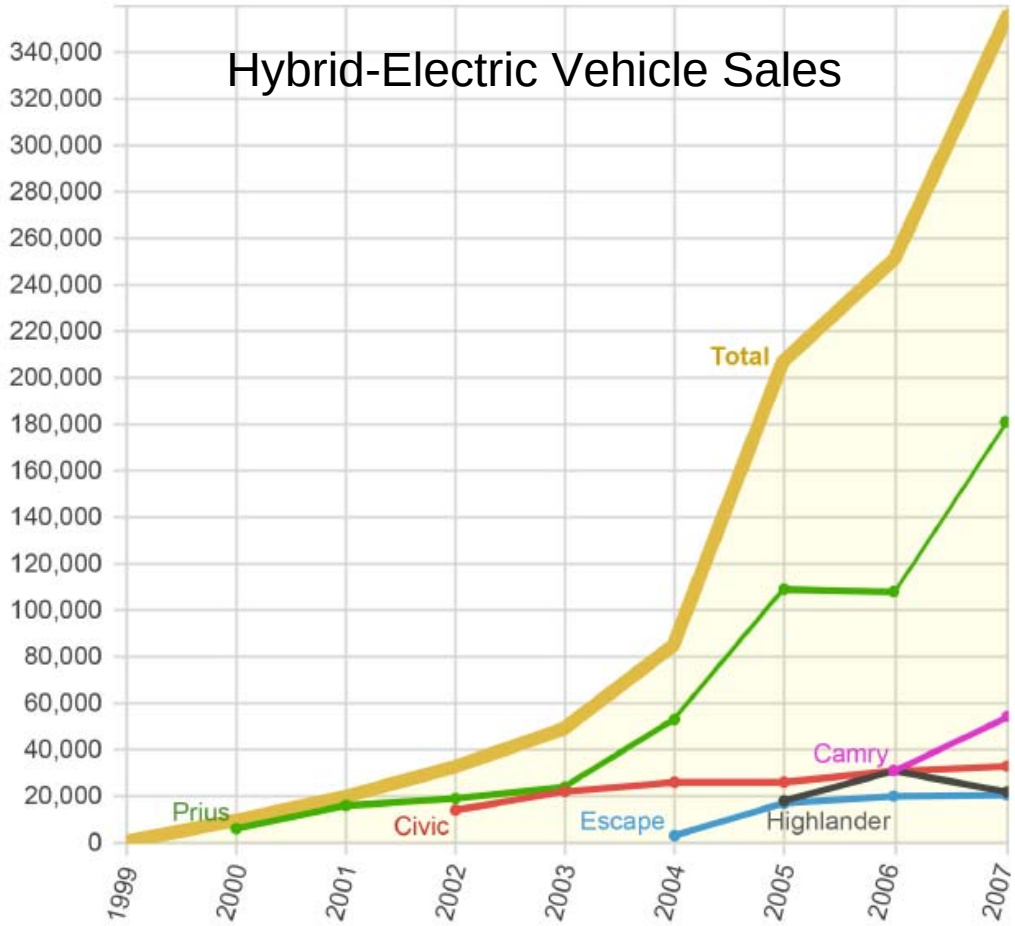
- Educate
- Provide tools
- Act as a forum for industry dialog
- Offer expertise
- Transform the Marketplace!

LEED is the Answer

- LEED-NC Process
  - Engage Teams Early!
    - This helps to maximize the synergies of holistic design strategies.
    - Make sure roles and expectations are clearly defined.
  - Register the Project
    - Certification begins here.
  - Hold a Design Charrette
    - Open discussion! Owner's Project Requirements (OPR), Basis of Design (BOD), Commissioning
  - Design, Construction and Data Collection
    - Take advantage of collaborative efforts of all design and construction team members
  - Finalize Submission
    - LEED online, initial audit, resubmission(?) and next steps

High-Performance Buildings

- Why look at cars?



Source: Hybrid Cars, December 2007 Hybrid Market Dashboard

High-Performance Buildings

"Buildings with energy, economic, and environmental performance that are substantially better than standard practice." – DOE EERE

What it takes:

- Benchmark
- Investment
- Education
- Team performance
  - Integrated, whole-building approach
- Follow through

High-Performance Buildings

What you get:

- Building performance
- Return on Investment
- Occupant health
- Environmental responsibility
- Market transformation

Quantitative vs. Qualitative

- Saving money through energy efficiency
  - energy modeling
    - LEED mandate
    - Design assistance
  - data analysis
- Water savings
- Extended life
- Lower insurance premiums
- Tax benefits
- Divert landfill waste
- Grant funding

Quantitative vs. Qualitative

- Commissioning (multiple benefits)
- Higher rents
- Higher resale value
- Less vacancies
- Less turnover
- Better employee productivity
- Better retail sales
- Reduced hospital stay
- Better occupant health

Life Cycle and Total Cost of Ownership

- LCA – Life Cycle Assessment
  - What is it?
  - Why should I care?
- Cradle to Grave vs. Cradle to Cradle
- Are resources unlimited?
- Is self-subsidizing necessary?

Cost Studies

State of California Cost Study

- Concludes sustainable building is cost effective
- First cost increase is minimal is any (1-2%)
- Life cycle savings of 20% of total construction cost
- http://www.ciwmb.ca.gov/greenbuilding/design/costbenefit/report.pdf

First Cost vs. Certification Level Achieved

Certification Level	Cost Premium	Number of Projects Included
Certified	0.66	8
Silver	2.11	18
Gold	1.82	6
Platinum	6.50	1
Average	1.84	33

Source: Greg Kats, The Cost and Financial Benefits of Green Buildings, 2003

GSA LEED® Cost Study

- As a result of this study, “GSA’s P100 requires all new construction and major modernization projects to be certified through the LEED (Silver) program...”
- http://www.ecy.wa.gov/programs/swfa/greenbuilding/pdf/gsaleed.pdf

First Cost vs. Certification Level Achieved

Certification Level	Cost Premium by Building Type	
	New Courthouse	Office Building Modernization
Certified	-0.4~1.0%	1.4~2.1%
Silver	-0.03~4.4%	3.1~4.2%
Gold	1.4~8.1%	7.8~8.2%

Source: GSA LEED ® Cost Study, 2004, Page 2

Davis Langdon Cost Study

- Cost of Green Revisited, 2004 & 2006
- “Many project teams are building green with little or no added project cost.”
- Despite rising construction costs, LEED certification is still a priority with projects still coming within budget
- “There is *no* significant difference in average costs for green buildings vs. non-green buildings.”
- http://www.davislangdon.com/USA/Research/ResearchFinder/2007-The-Cost-of-Green-Revisited/

Greening America's Schools

- National review of 30 schools
- Green schools cost less than 2% more than conventional schools
- http://www.cap-e.com/ewebeditpro/items/O59F9819.pdf

Financial Benefits of Green Schools ($/ft^2)

Energy	$9
Emissions	$1
Water and Wastewater	$1
Increased Earnings	$49
Asthma Reduction	$3
Cold and Flu Reduction	$5
Teacher Retention	$4
Employment Impact	$2
TOTAL	$74
COST OF GREENING	($3)
NET FINANCIAL BENEFITS	$71

Source: Greg Kats, Greening America's Schools, 2006

Thank You

Questions?


U.S. GREEN BUILDING COUNCIL
LEED CERTIFIED
2006