

Going Green: How Green Buildings Affect Property Values



Ballard Library in Seattle. A state-of-the-art green building which makes use of a sod roof, daylighting, and translucent thin-film solar collectors. It is listed in the American Institute of Architecture's top ten green buildings.

What is “Green”?

- No single definition in the context of green buildings.
- “Green” fluctuates between professions
 - Architects and designers tend to reference “green” based on a building’s materials and design
 - Owners and developers focus more on building systems and operations
- Definition should include: buildings and/or building attributes that contain sustainable and high performance:
 - design features
 - building materials
 - efficient systems
 - operating protocols

The Green Movement

- Robert Watson, Scientist for NRDC (Natural Resource Defense Council)
 - Chaired the first LEED Green Building Rating System Meeting for USGBC
 - Early 1990's touted the benefits of "Green" Buildings
- "Green" Building concepts were mostly ignored until early 2000's
 - Climate Change and Global Warming
 - Initially concerned with public buildings

The Premise for Going Green

- U.S. Dept of Energy and U.S. Dept of Transportation estimates buildings account for 39% of all energy use in the U.S.
 - More than industrial and transportation
- The United States Green Building Council (USGBC) claims that U.S. buildings account for:
 - 65% of electricity consumption
 - 36% of energy use
 - 30% of greenhouse gas emissions (GHG)
 - 30% of raw materials use
 - 30% of waste output
 - 12% of potable water consumption

Premise for Going Green (cont.)

- Many U.S. municipalities have passed ordinances requiring public buildings to achieve minimum LEED certification
- 22 States and more than 50 municipal governments have passed legislation mandating LEED certified public buildings.
 - green building requirements into building codes.
- December 2007 – San Francisco changed its building code to require all buildings to be LEED certified

City of Dallas: Requires Green

- 4/08 – Dallas City Council passes new construction requirement to reduce environmental impact; Dallas becomes one of the first major U.S. cities to pass comprehensive building standard for both residential and commercial construction
- Phase 1, beginning in 2009, commercial projects *over* 50,000 square feet, phase 1 requires buildings to meet 85 percent of the points required under the appropriate LEED rating system for a certified level
- Phase 2, beginning in 2011, requires all commercial projects to be LEED certifiable (or other similar accredited rating) under the appropriate LEED rating system.

Green Building Codes Major U.S. Cities

CITY	YEAR	TARGET Residential (R), Private (P), Gov/Public (G)	MEASURING STICK	KEY FEATURES
Annapolis, MD	2008	R, P, G	LEED	- LEED Silver for public buildings - LEED Certified for new residential construction and commercial projects receiving public funds
Atlanta, GA	2003	G, R	LEED	- City-funded projects of 5,000+ sq ft, or \$2 million+ to meet LEED Silver
Austin, TX	2000, 2006	R, P, G	Austin Energy Green Building Rating, LEED	- '00: Municipal buildings must comply with LEED Silver - '06: Requires 1-3 "star" (out of 5) Austin Energy compliance for certain building zones. - '06: Some large commercial and multi-family developments require LEED Certified
Boston, MA	2003	G	LEED	- LEED Certified for 50,000+ sq ft public projects
Chicago, IL	2004	G	LEED	- LEED Silver for new/renovated municipal buildings.
Dallas, TX	2008	P, G	% reduction	Buildings < 50,000 sq ft to use 15% less energy and 20% less water; less stringent for > 50,000 sq ft
Los Angeles, CA	2002, 2008	P, G	LEED	'02: LEED Certified for >7500 sq ft public buildings '08: >50,000 sq ft private buildings follow 'checklist' of requirements
New York City, NY	2007	G	LEED, % reduction	- LEED Silver for \$2 million+ projects. Schools and hospitals can meet LEED Certified - Also require 5-30% energy cost reductions depending on building type
Portland, OR	2001, 2008 (possible)	G, R	Portland LEED, fees/rewards	- '01: Public building projects must meet Portland LEED standard - '08: Fees for builders to meet code, no fee for 30% more efficient, rewards for 45%+ more efficient
San Francisco, CA	2004, 2008 (expected)	R, P, G	LEED, GreenPoint	- '04: LEED Certified for municipal construction projects - '08: LEED Certified for large, commercial buildings in '08, LEED gold in '12; GreenPoint ratings for residential
Seattle, WA	2000, 2008	P, R, G	LEED, % reduction	- '00: All city buildings LEED Silver - '08 Goal: reduce energy use in new and existing commercial and residential buildings by 20%
Washington, DC	2007	G, P	LEED	- LEED Certified for projects w/15% public money - LEED Certified for 50,000+ sq ft buildings in 2009

Green Building Programs in Cities with a Population Over 50,000



Certifying Green

- Many organizations globally – some for profit, but most are a non-profit accreditation structure
- USGBC, Green Globes, Energy Star – Dominate the U.S. marketplace
- Internationally – GBC, Green Star and BREEAM (Building Research Establishment Environmental Assessment Method)

Certifying Green (Cont.)

- LEED (Leadership in Energy and Environmental Design) is the most recognized certification in the U.S.
- Energy Star established by EPA
- Distinct differences between the two programs
- Green without certification
 - Mandatory
 - Cost
 - Complexity of certification

LEED Certification

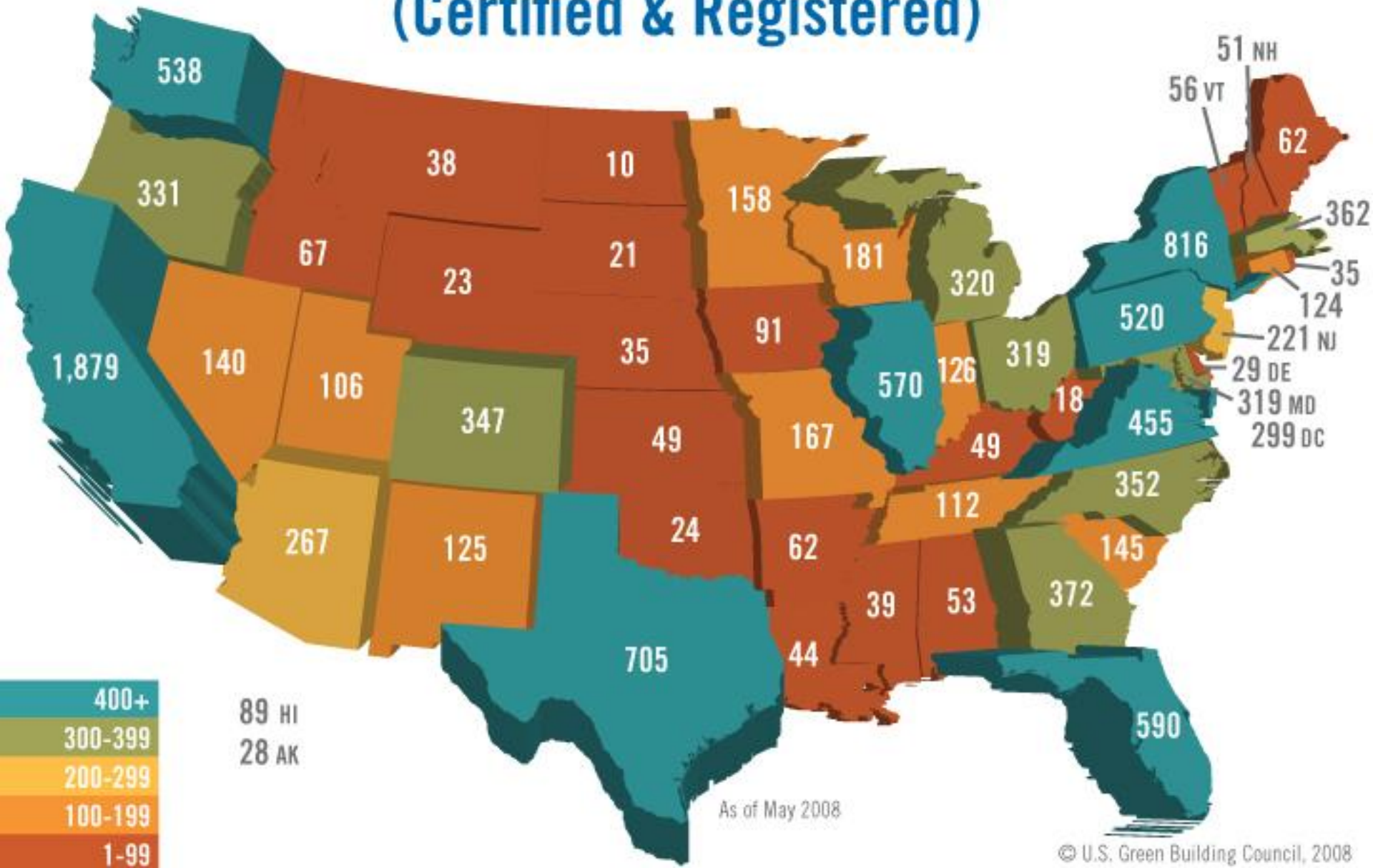
- The USGBC introduced the LEED Rating System in 1998
- Continuing to develop and update certification criteria based on a point system
- There are four levels of sustainability under the LEED rating system which are:

<i>LEED Certified:</i>	<i>26-32 points or >37% of max.</i>
<i>LEED Certified Silver Level:</i>	<i>33-38 points or >47% of max.</i>
<i>LEED Certified Gold Level:</i>	<i>39-51 points or >56% of max.</i>
<i>LEED Certified Platinum Level:</i>	<i>52-69 points or >75% of max.</i>
- Points at each level can be achieved in many different ways

LEED Certification (cont.)

- Based on the LEED checklist, the elements of a “green” building are:
 - Sustainable site
 - Water efficiency
 - Energy and atmosphere
 - Materials and resources
 - Indoor environmental quality
 - Innovation and design process

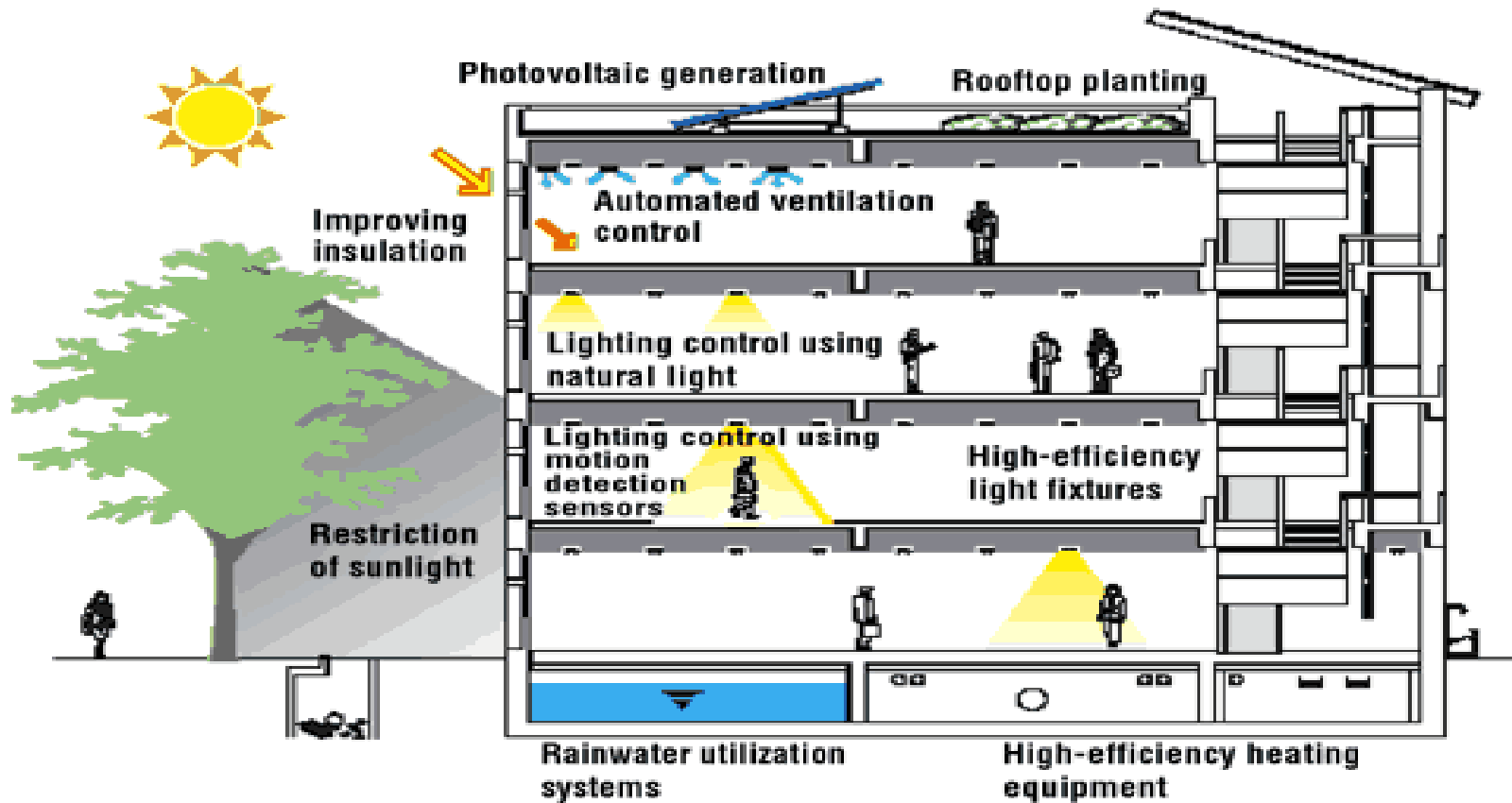
Commercial LEED Projects by State (Certified & Registered)



Examples of “Green” Components

- Daylighting
- Energy Management Systems
- Green “Veggie” and Cool Roofs
- Rain/Wastewater recycling systems
- Low Volatile Organic Compound (VOC)
- Construction Material/Technology Advancement
- Recycled/Sustainable Products
 - Sustainable lumber/wood products

Green Components



Conceptual Drawing of Green Building

The Color of Money is Green



Valuation Issues

- Remember to focus on “inside the definition” of market value
- Triple Bottom Line – Social, Environmental, Economic
- Benefits of Green may be:
 - Realized by the community
 - **Realized by the owner/user**
 - Non-Monetary
 - **Monetary**
 - Indirect
 - **Direct**

Valuation Issues (cont.)

- Lack of available data
- Many markets have yet to see their first green building
- Few sales of green buildings
- Renewed focus on building design, materials, building systems, operations (be careful of specific system valuation vs. integrated)
- Estimating obsolescence in the presence of the performance capabilities of green buildings and existing non-green buildings (functional inutility)

Valuation Clues

- Thoroughly describe and understand sustainability attributes and components
- Use LEED criteria as a basic organizational guide
- Gather as much info on design development process and trade-off analysis
- Measure expectations of developers, lenders, tenants, and investors
- Focus on attributes that may have a material effect upon property performance, revenue, operating expense, and risk.

Risk Profile of Green Buildings

- Lower exposure to energy costs and consumables costs increase
- Greater construction and delivery risks
- Pattern of lease-up and absorption risk
- Fewer peers in the marketplace
- Tenant retention and turn-over risk (longer term?)
- Re-tenanting costs (modular systems)
- Pattern of periodic capital replacements
- Reversion Price
- Lower exposure to obsolescence

The Approaches to Value

- All factors should be viewed within the context of market value
- The Sales Approach – likely too weak at this time
- The Cost Approach -
 - Reproduction or Replacement?
 - On new construction get the Spec Sheet
 - Commissioning Report may reveal poorly designed systems
 - R.S. Means produces a green cost study
 - At this time, reproduction cost may prove more relevant
 - Life Cycle Cost (LCC)- form of financial analysis that takes into account the total cost of a building over its life

The Approaches to Value (cont.)

- The Income Approach
 - Property Revenue
 - How does the rental profile match against its comp set
 - Evidence of premiums at other green buildings
 - Take care to assure that any premiums or discounts are adequately supported
 - Gross vs. Net – Who gets the benefits?
 - Green Lease Clauses – typically provides equitable sharing of costs and benefits

The Approaches to Value (cont.)

- The Income Approach
 - Operating Expenses
 - Find sources of information for sustainable features
 - Architect, engineer, energy modeler, green consultant
 - Be alert to include not only differences in consumption, but also the differences in capital expenses, special maintenance, and replacement allowances
 - Watch for the handling of TI's – LEED interior
 - Remember some incentives expire over time

The Approaches to Value (cont.)

- The Income Approach
 - Overall cap rate and discount rate (Green v. NG)
 - Safe Rate component is unchanged – based on alt investment
 - Management component may change
 - Risk component may change
 - Liquidity component may change

Conclusions to Value Green

- The Income Approach
 - At this time, the Discount Cash Flow (DCF) analysis is preferred over Direct Capitalization for green building valuation
 - Addressed income and value changes parameters in the cash flow forecast, not in the rate
 - What if your jurisdiction doesn't work with DCF's?

Mark Bennett, Chair of the National Green Building Finance and Investment Forum

- Comments to further consider in valuation:
 - *There's a bit of urgency now that the value of buildings could be affected if they are not LEED-certified"*
 - *"In large part, they were referring to LEED certification as a component in the definition of a Class A office building,"*
 - *"They basically said, 'If you're building today without LEED, you're building in obsolescence.' "*

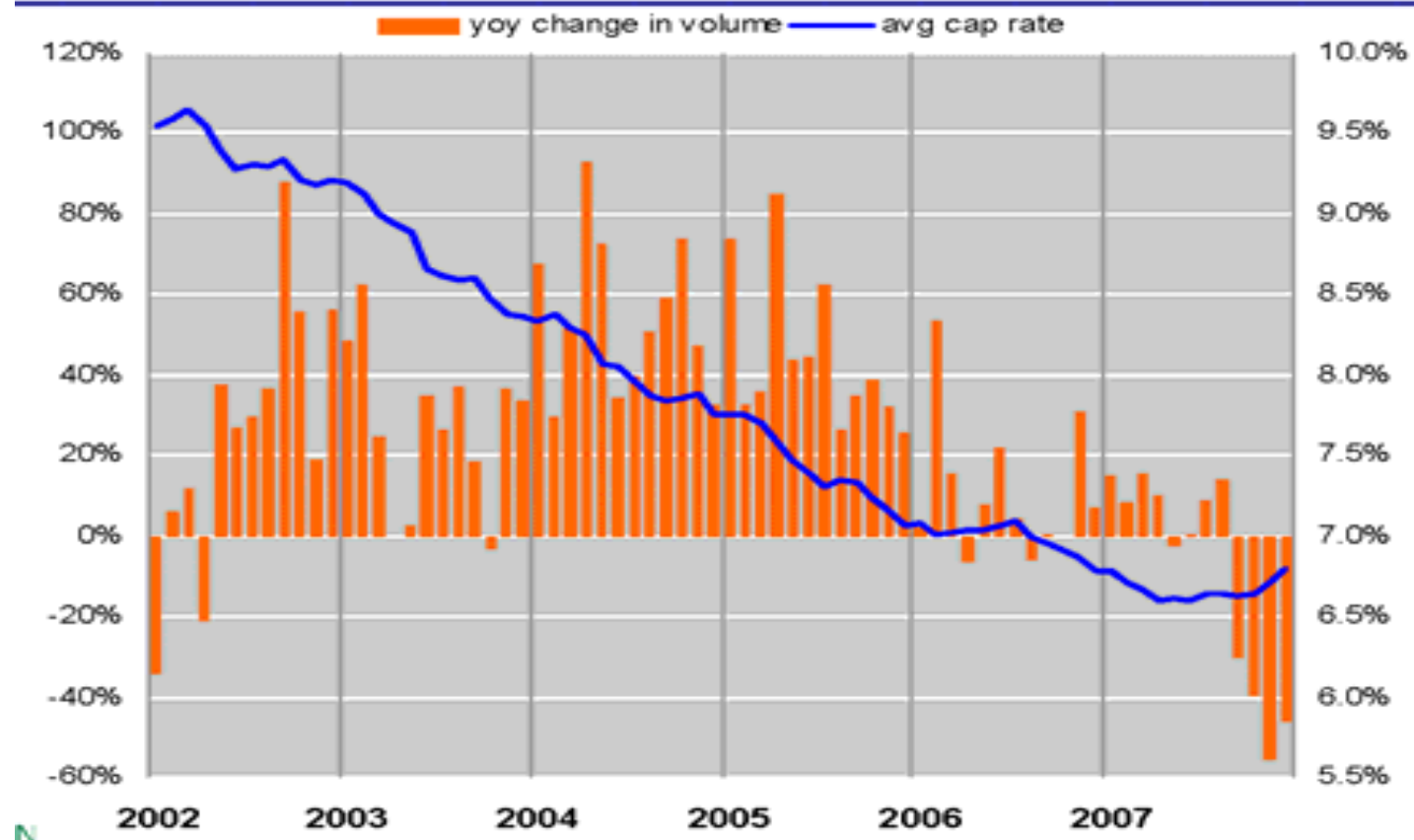
The CoStar Study (Watch Out)

- The CoStar Study represents itself as the “...first systematic study, as opposed to case studies, that addresses questions on the benefits of investments in energy savings and environmental design.”
- Conclusions most frequently cited March 2008 were:
 - LEED buildings sold for \$171 per square foot, or 64% more than comparable non-LEED buildings
 - Rented for \$11.33 per square foot, or 36% more than non-LEED buildings.
- These conclusions were communicated strongly, without further qualification, and widely disseminated.

Refuting The CoStar Study

- Methodology Issues:
 - Peer Building Selection vs. Hedonic Pricing Model
 - LEED Building A is not the same as LEED Building B
 - Statistical samples too small (only 77 LEED buildings used)
- Technical Issues: to be reliable, green and non-green comps would need to be:
 - Similar buildings in near identical locations appealing to the same markets
 - CoStar comps up to 5 miles away from Subject
 - Most not even in the same sub-market
 - Bundle of similar leasing attributes
 - No adjustments made for lease differences
 - Tightly controlling for age and dates of sale
 - CoStar used buildings built 1990 or newer
 - Sale prices increased radically over the study period

Refuting The CoStar Study (cont.)



Incentives (cont.)

- Private incentives may be available through:
 - Regulated Utilities
 - Lower insurance premiums
 - Example: 5% total insurance deduction for LEED certified
- Incentives that are substantially monetary, direct, and exclusive to the project or owner may affect value
- Incentives can represent a wasting or diminishing benefit which results in a temporary income and value benefit
 - 10 year break on property taxes for LEED certification

Incentives

- Incentives encourage adoption of sustainable features
- Local, State, Federal levels of government
 - Grants and loans
 - Reduced Property Taxes
 - Density Bonus
 - Expedited entitlements and approvals
 - Preferred rate financing – TIF's