

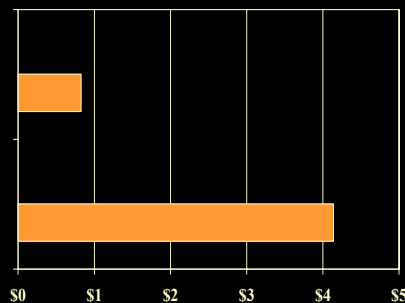
Energy Star Benchmarking for Existing Commercial Buildings

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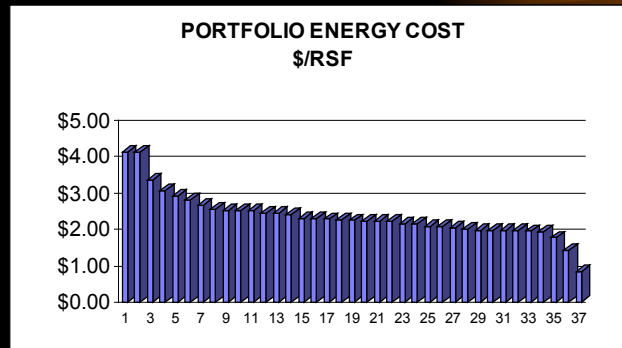
Why Benchmark?

Range of Energy Costs

- Office Bldg X
» \$0.83 / RSF / Yr.
- Office Bldg Y
» \$4.14 / RSF / Yr.



Portfolio Comparison



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Levels of Benchmarking

- Raw Cost (\$/Sq. Ft.)
- Raw Energy (BTU/Sq. Ft.)
- Energy Performance Factors
 - Climate
 - Occupancy Type
 - Operating Schedule
 - Occupant Density
 - Space Use

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Energy Star Benchmarking

- Benchmarking Based on Key Factors
 - Climate
 - Occupancy Type and Schedule
- Comparison to DOE Database
- Top 25% of Buildings Qualify for Energy Star Label

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Energy Star Label Process

- Enter Data on Website
 - Basic Building Data
 - Space Use and Operating Schedules
 - Utility Data
- Get Results Immediately
- P.E. Certifies Qualifications
- Apply for Energy Star Building Label

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Energy Star Label

The Label is Not the Ultimate Goal:

- Most Labeled Buildings have Further Improvement Opportunities
- On-going Benchmarking Provides Documentation of Results

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Initial Energy Star Benchmarking

- Bldg A 75
- Bldg B 92
- Bldg C 90
- Bldg D 72

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Energy Measures

Bldg A: 240,000 SF

- Heating Control Repair
- OA Economizer Recommissioning
- Limited Lighting Retrofit

Energy Measures

Bldg B: 411,000 SF

- Major Lighting Retrofit
- Occupancy Sensors

Energy Measures

Bldg C: 237,000 SF

- Variable Frequency Drives
- New Energy Management System
- Major Lighting Retrofit
- Occupancy Sensors

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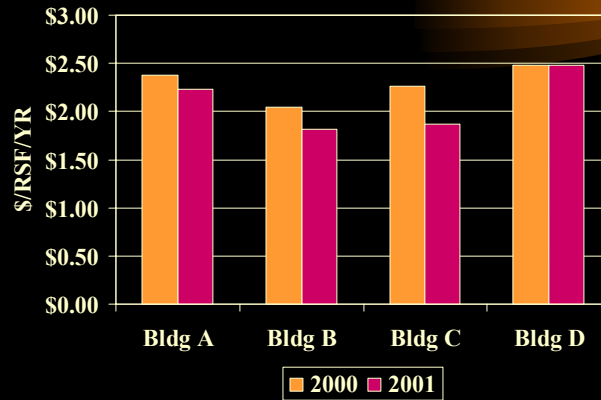
Energy Measures

Bldg D: 502,000 SF

- New Energy Management System
- Lighting Scheduling Control
- Chiller Plant Recommissioning
- Garage Ventilation CO Control

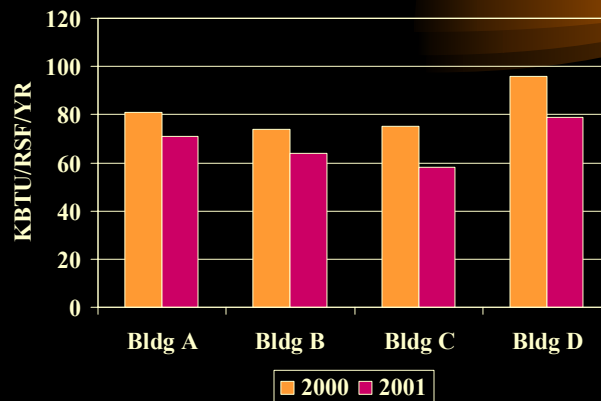
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Results: Year-to-Year Costs



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Results: Year-to-Year Energy Use



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Energy Star Ratings

	<u>2000</u>	<u>2001</u>
Bldg A	75	85
Bldg B	92	97
Bldg C	90	98
Bldg D	72	82