



The Power of Main Street

Leveraging Efficiency to Create Value

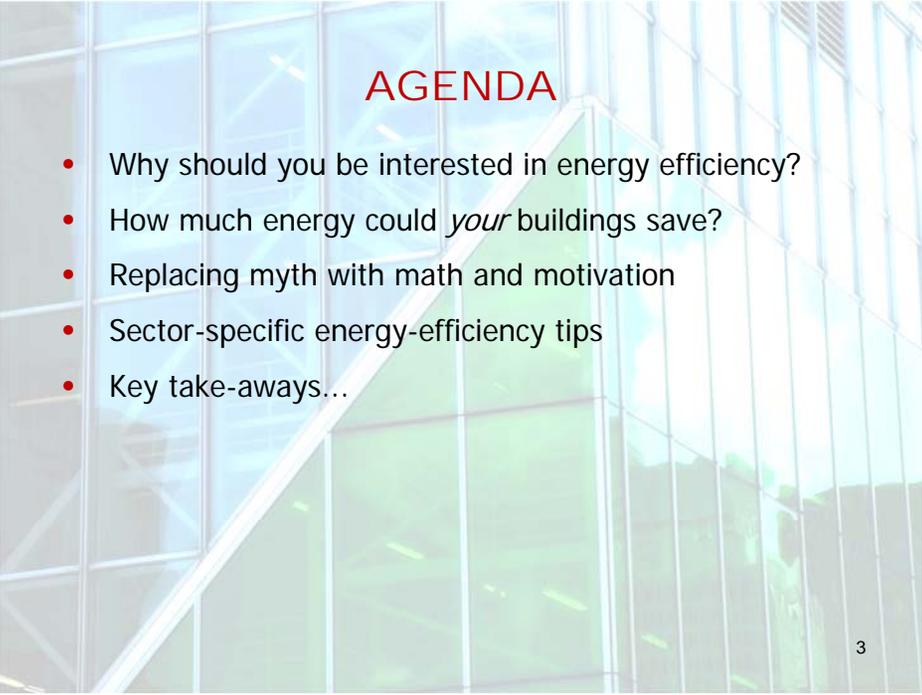
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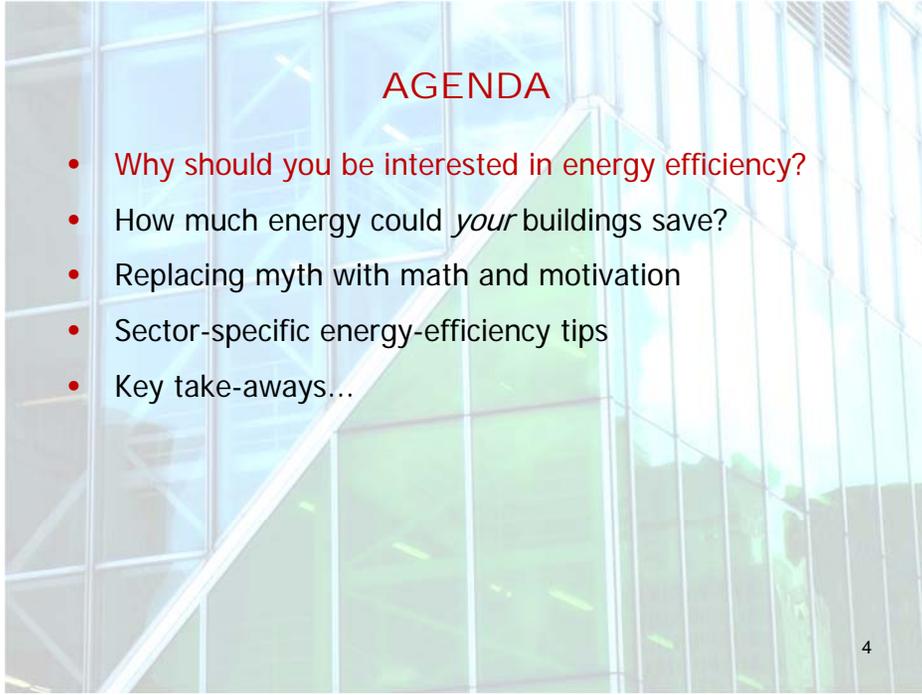


Welcome



AGENDA

- Why should you be interested in energy efficiency?
- How much energy could *your* buildings save?
- Replacing myth with math and motivation
- Sector-specific energy-efficiency tips
- Key take-aways...



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How important is energy efficiency to your (or your customers') bottom line?

How many of you own the building you occupy?

How many landlords are here today?

How many tenants are here today?

WHY IMPROVE ENERGY EFFICIENCY?

- Utility-cost financial benefits

WHY IMPROVE ENERGY EFFICIENCY?

- Utility-cost financial benefits
- Non-utility-cost financial benefits

WHY IMPROVE ENERGY EFFICIENCY?

- Utility-cost financial benefits
- Non-utility-cost financial benefits
- Non-financial benefits

Which is the most compelling subset of benefits?

- Utility-cost financial?
- Non-utility-cost financial?
- Non-financial?

EFFICIENCY SUPPORTS PROFITABILITY

- What % of your overhead is energy?
- Could EE boost marketing or productivity?

IMPACT OF EE ON PRODUCTIVITY

- Assume \$40,000 average salary/benefits per person
- Assume 200 square feet per person
- \$200/SF in payroll vs. \$2/SF in utilities
- What if your efficiency campaign boosted productivity by just 1%?

PRODUCTIVITY BENEFITS OF EE...

- Lockheed
 - 15% rise in production
 - 15% drop in absenteeism
- West Bend Mutual Insurance
 - 16% increase in claims processed
- ING Bank
 - 15% drop in absenteeism
- Verifone
 - 5% increase in productivity
 - 40% drop in absenteeism

GREENING THE BUILDING AND THE BOTTOM LINE

Increasing Productivity Through Energy-Efficient Design



By Joseph J. Romm
U.S. DEPARTMENT OF ENERGY
and
WILLIAM D. BROWNING
ROCKY MOUNTAIN INSTITUTE

EE IS VITAL TO INCOME PROPERTY

- "The building is the business"
- Energy is a very large portion of operating expenses
- You need to know how costs/benefits would be shared, AND...
- You need to know how *Owner's share* would affect value



OWNER-OCCUPANTS AND TENANTS

More
Competitive

Lower occupancy cost enables competitive pricing

Sustainability & comfort can help attract or retain employees, investors, and customers

More
Profitable

Lowering "heat, power and light" improves profitability; reduces risk of price spikes

Greater comfort & convenience supports higher productivity

More
Valuable

Lower operating expense increases earnings per share

More efficient facilities have higher resale values

INCOME-PRODUCING PROPERTIES

More
Competitive

Lower occupancy cost

Enhanced comfort & productivity

Sustainability that gives marketing advantage

More
Profitable

Better tenant retention & attraction

Lower vacancy rates result in higher rent revenue

Lower tenant utility bills support higher base rents

More
Valuable

Higher rent revenue increases cash flow

Lower operating costs increase cash flow

Higher net operating income (NOI) supports higher appraisal

NON-PROFIT HEALTHCARE

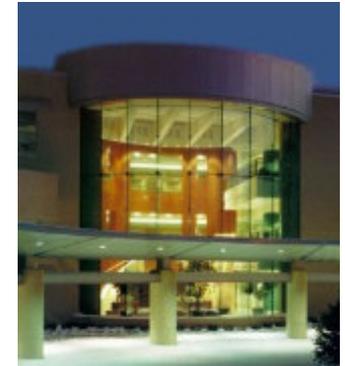


- Every \$1 that a non-profit healthcare organization saves on energy is equivalent to...
 - \$20 in new revenues for hospitals
 - \$10 in new revenues for medical offices

Source: US EPA ENERGY STAR

FOR-PROFIT HEALTHCARE

- Every 5% reduction in energy costs can boost earnings per share by a penny
 - Hospitals
 - Medical offices
 - Nursing homes



Source: US EPA ENERGY STAR

HOSPITALITY

- US hotels spend close to \$4 billion on energy every year
- Reducing these costs by 10% is equivalent to...
 - \$0.62 Average Daily Rate (ADR) for limited service hotels
 - \$1.35 ADR increase for full service hotels



Source: US EPA ENERGY STAR

GROCERY RETAILERS

- Among the most energy-intensive commercial buildings: >\$4/SF annual average energy cost
- Profit margins only ~ 1%
- \$1 in energy savings is equivalent to increasing sales by \$59!



Source: US EPA ENERGY STAR

SMALL RETAILERS

- Retail companies spend nearly \$20 billion on energy each year
- A 10% reduction in energy costs for the average full-line discount retailer can boost net profit margins by as much as 1.55% and sales per square foot by \$25.

Source: Small Business Administration

LIMITED SERVICE RESTAURANTS

- A 10% reduction in energy costs for the average limited service restaurant equates to...
 - 4% higher net profit margin
 - \$17 per square foot of increased sales

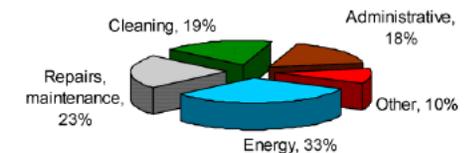
Source: Small Business Administration

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HUGE SAVINGS POTENTIAL

- Buildings benchmarked in the lowest 10% can use > 4 times as much energy as those in the highest 10%.¹
- The average US office building uses 20% more energy than necessary.²



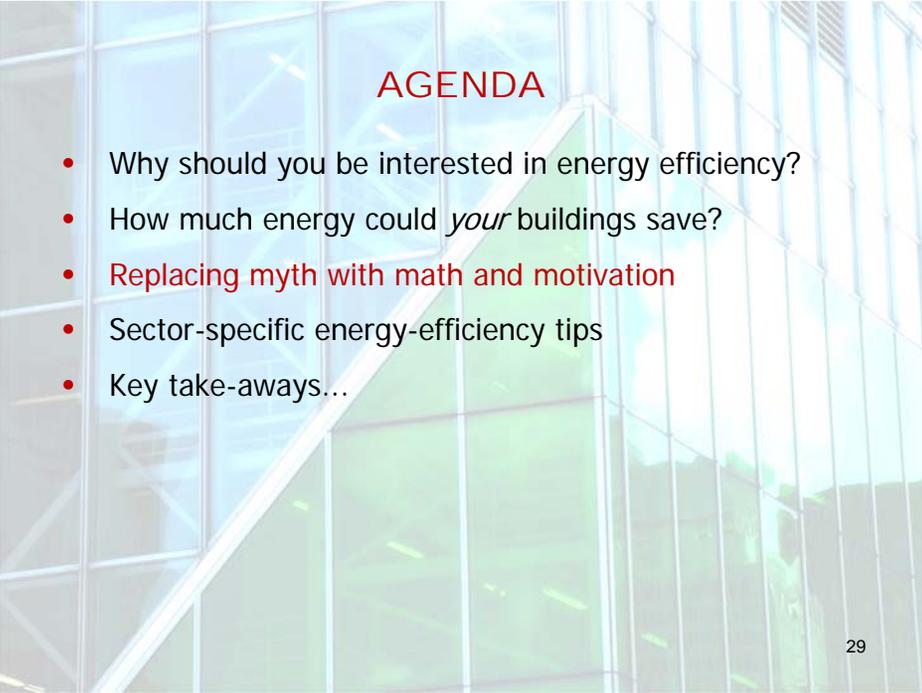
- New buildings could save up to 50% of energy used.⁴

¹ Based on US EPA energy-performance benchmarking data

² American Council for Energy-Efficient Economy, 2005 study

³ Pie chart shows US average commercial office building operating expenses, as per BOMA

⁴ US Energy Information Agency

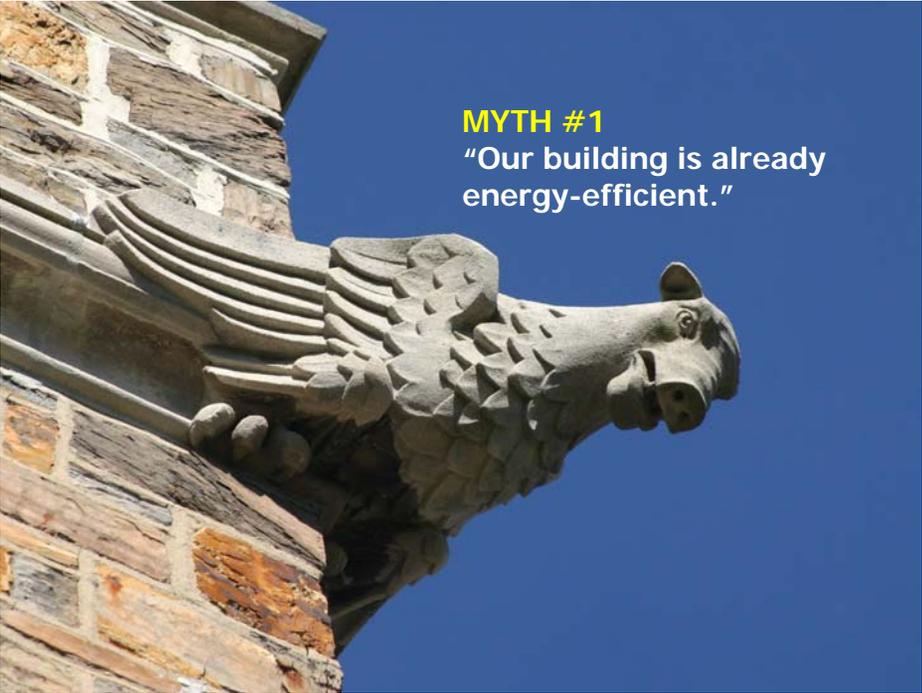


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What challenges do you face when improving your (or your customers') energy efficiency?



MYTH #1

"Our building is already energy-efficient."

How many of you have benchmarked your buildings' energy performance?

ENERGY STAR® PORTFOLIO MANAGER



WHY THE ENERGY STAR PERFORMANCE SCALE?

- Free and secure tool based on US building data
 - Web-based, easy-to-use, 1-100 scale
- Industry standard
- Comprehensive development process
 - Extensive research and database
 - EPA, DOE, NOAA
- Symbol of superior energy performance
 - Recognized by 75% of Americans



COMPARATIVE METRIC

Is 60 MPG high or low
for this automobile?



Fuel Efficiency:
MPG

Is 90 kBtu/SF/YR high or low
for this building?



Energy Performance
Score: **1 to 100**

ALL BUILDING TYPES CAN BE BENCHMARKED...

- "Primary" or "Ratable" space types
 - 15 space types; certain other eligibility criteria apply
 - Weather-normalized kBtu/sf
 - 1-100 ENERGY STAR rating
 - Qualify for ENERGY STAR if score is 75 or higher



ALL BUILDING TYPES CAN BE BENCHMARKED...

- “Other” space types
 - Weather-normalized kBTU/sf
 - National average kBTU/sf for comparison



ALL BUILDING TYPES CAN BE BENCHMARKED...

- “Other Other” space types
 - Weather-normalized kBTU/sf
 - Track kBTU/sf over time



HOW DOES THE ENERGY PERFORMANCE RATING SYSTEM WORK?

Normalizes building variables affecting energy consumption...

Building size
Space type
Weather
Hours of operation
Occupancy
Plug load

...and creates a whole building “mpg” rating

www.energystar.gov/benchmark

ELIGIBLE SPACE TYPES FOR ENERGY STAR SCORE OF 1 TO 100



Bank/Financial Institutions



Courthouses



Data Centers



Dormitories



Hospitals



Hotels



Houses of Worship



K-12 Schools



Medical Offices



Office Buildings



Retail Stores



Supermarkets



Warehouses

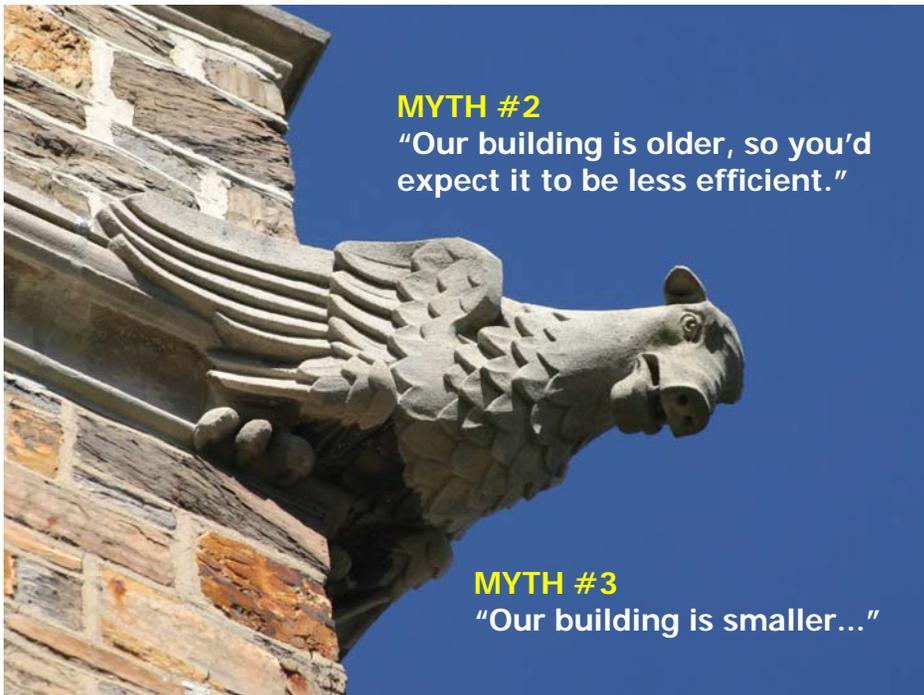


Wastewater Treatment Plants



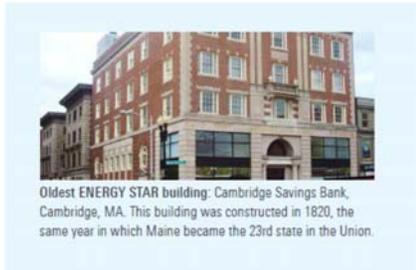
Since March 21, 2011

Senior Care



MYTH #2
 "Our building is older, so you'd expect it to be less efficient."

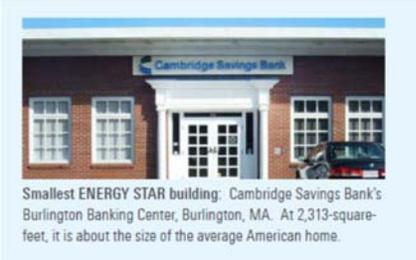
MYTH #3
 "Our building is smaller..."



Oldest ENERGY STAR building: Cambridge Savings Bank, Cambridge, MA. This building was constructed in 1820, the same year in which Maine became the 23rd state in the Union.

The **oldest** ENERGY STAR labeled building was built in 1820

The **smallest** ENERGY STAR labeled building is 2,313 square feet

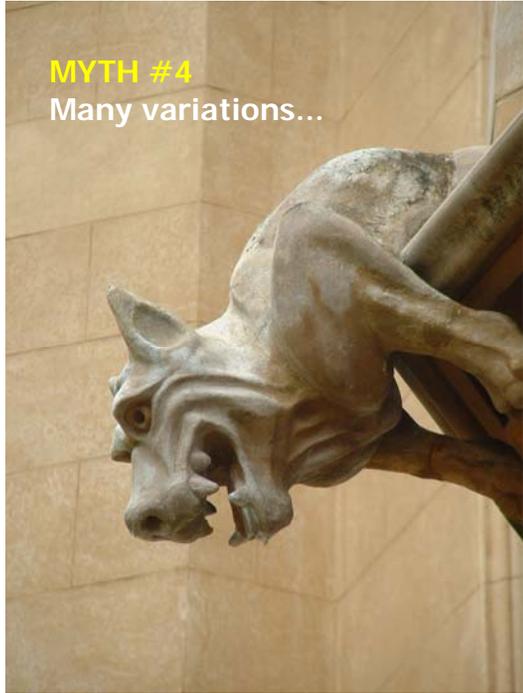


Smallest ENERGY STAR building: Cambridge Savings Bank's Burlington Banking Center, Burlington, MA. At 2,313-square-feet, it is about the size of the average American home.



What are some ways that landlords and tenants can cooperate in the pursuit of greater energy efficiency?

- "Energy costs are a pass-through to tenants."
- "Upgrades in mid-lease won't benefit the owner."
- "It's best to do upgrades as leases rollover."
- "It's too difficult to predict the owner's share of savings."
- "It's not my building..."



MYTH #4
 Many variations...



ALLOCATION OF UTILITIES VARIES WIDELY

- Gross lease
- Net lease
- Fixed-base lease

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WHO BENEFITS FROM INCREASED EE?

Net lease

- ✓ Tenant enjoys full benefit
- ✓ May enhance tenant's ability to pay rent

Gross lease

- ✓ Landlord enjoys full benefit
- ✓ May improve owner's NOI and asset value

Fixed-base lease

- ✓ T gets savings above "expense stop"*
- ✓ L gets savings below "expense stop"*
- ✓ Is energy linked to other operating expenses?

Need for lease amendment varies

* Sometimes expressed as "base year amount"

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ENERGY EFFICIENCY LEASE GUIDELINES

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UPGRADING TENANT SPACES



For decades, tenants and landlords have engaged in leasing practices that create disincentives to invest in projects that reduce operating expenses. This appendix provides both principles and practical guidelines for renegotiating leases to enable both tenants and landlords to gain the financial and qualitative benefits of energy-efficient lighting.

EXECUTIVE SUMMARY

- Regardless of the present leasing structure, energy savings can be used to improve cash flow and create higher property values.
- The owner's net operating income (NOI) can be increased in proportion to the energy savings achieved by a lighting upgrade.
- Assuming a 10% capitalization rate, every \$1.00 saved in annual lighting expense (or \$1.00 increase in NOI) can translate into an increase of \$10.00 in asset value.
- Net leases can be renegotiated to lower the tenants' occupancy costs AND enable the landlord

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CALIFORNIA SUSTAINABILITY ALLIANCE

Green Leases Toolkit

1. Educate landlords and tenants
2. Develop green leasing policies and requirements
3. Communicate policies and requirements to the market
4. Measure and compare the green attributes of different buildings
5. Develop specific lease language



http://www.sustainca.org/content/green_leases_toolkit

CA SUSTAINABILITY ALLIANCE

Provision	Significance	Sample Lease Provisions
Building Certifications		
ENERGY STAR Rating	Establish the minimum level of energy efficiency for the building and systems.	Lessor and Lessor will work together to achieve an ENERGY STAR rating of 75 within X months after the Commencement date.
LEED-EB	Ensure sustainable practices throughout building by obtaining LEED certification.	Lessor and Lessor shall mutually agree to work towards LEED EB certification.
Alternative Transportation		
Employee Shuttle	Reduce pollution and land development impacts from automobile use.	Lessor will provide a shuttle linking Lessor's employees to public transportation hubs (frequency of shuttle to be addressed based on employee commute info).
Employee Bike Use	Reduce pollution and land development impacts from automobile use.	Lessor shall require that the Lessor provide bicycle storage (racks) and showering/locker room facilities. Lessor shall operate, maintain and secure the facilities.
Fuel-Efficient Vehicle Use	Reduce pollution and land development impacts from automobile use.	Lessor shall establish preferred parking programs for hybrid and alternative fuel vehicles.
Carpool Use	Reduce pollution and land development impacts from single-occupancy vehicle use.	Lessor shall establish preferred parking programs for high occupancy (car pools) vehicles.
Water Use		
Water Fixture Efficiency	Maximize water efficiency within buildings to reduce the burden on potable water supply and wastewater systems.	All fixtures and accessories must be in compliance with EPA Act of 1992. Lessor shall limit flow rates to 2 gpm for lavatory and multipurpose faucets and 2.5 gpm for kitchen faucets (at 80 psi). Lessor shall limit flow rates to 2.4 gpm for showerheads (at 80 psi). Lessor shall limit maximum flush volume to 1.6 gallons for toilets. Lessor shall establish usage reporting protocols with Lessee.

BUSINESS COUNCIL ON CLIMATE CHANGE (SAN FRANCISCO)

Green Tenant Toolkit

1. Green Lease
2. Stakeholder Engagement
3. Checklists
4. Resources



<http://www.greentenanttoolkit.com/>

PLANYC NEW YORK CITY

Energy-Aligned Lease Language

1. Overcoming the “Split Incentive”
2. Protecting the tenants from underperformance
3. Model lease language
4. Financial calculator



<http://www.nyc.gov/html/planyc2030/html/about/ggbp.shtml>

BETTERBRICKS (NEEA)



<http://www.betterbricks.com/>

EACH LEASE TYPE HAS BENEFITS & CHALLENGES

Gross Leases Aligning with energy management goals	
Advantages	<ul style="list-style-type: none"> • Building owner receives the financial savings resulting from reduced energy consumption
Cautions	<ul style="list-style-type: none"> • Tenants have no direct financial incentive to limit energy usage
Best Practices	<ul style="list-style-type: none"> • Conduct needs analysis with tenants to determine expected operating conditions and hours and to optimize choices of equipment • Define procedures for confirmation of expected tenant needs versus actual use, and adjustments • Set minimum standards for installed or other equipment: <ul style="list-style-type: none"> ◦ ENERGY STAR labeled office, kitchen, or other appliances ◦ Building template for lamp count and ballast types for lighting ◦ Occupancy sensors for private offices • Clearly define specifications for: <ul style="list-style-type: none"> ◦ Expected operating hours ◦ Fresh-air standards ◦ Space temperatures ◦ Alternate settings for off-peak hours (nights, weekends)

EACH LEASE TYPE HAS BENEFITS & CHALLENGES

Net Leases Aligning with energy management goals	
Advantages	<ul style="list-style-type: none"> • Building owner is insulated from utility cost increases • Tenants have a more direct incentive to support energy efficiency efforts
Cautions	<ul style="list-style-type: none"> • Building owners have less direct financial incentive to limit energy usage • Tenant's "total occupancy cost" can be more volatile due to increased energy bills • Despite receiving significant financial savings, tenants may resist investments in energy efficiency when: <ul style="list-style-type: none"> ◦ Lease terms are shorter than the anticipated payback period ◦ Insufficient knowledge exists on the benefits of energy performance ◦ Investment is viewed as a solely benefiting building owners
Best Practices	<ul style="list-style-type: none"> • See best practices in Gross Leases table • Coordinate decisions on energy efficiency projects with tenants • Establish measurement protocols to determine share of cost savings allocated to tenants: <ul style="list-style-type: none"> ◦ Engineering estimates ◦ Sub metering • Offer to fund investments in capital upgrades completely, and split cost savings with tenants: <ul style="list-style-type: none"> ◦ Increase in capitalized value of incremental NOI may justify owner's investment ◦ Position the resulting cost savings as an added "service" to tenants ◦ Improved relations with tenants may aid future lease negotiations

EACH LEASE TYPE HAS BENEFITS & CHALLENGES

Fixed-base Leases Aligning with energy management goals	
Advantages	<ul style="list-style-type: none">• Building owner is insulated from utility cost increases above a certain negotiated point
Cautions	<ul style="list-style-type: none">• Utility cost increases can overwhelm caps on tenant escalations• Expense stop levels should be monitored and adjusted to mitigate any financial liabilities due to sudden energy price or usage changes• Combining utility costs with other operational expenses in one expense stop pool term can mask shifts in individual expenses• Interactions between multiple tenant's energy use can distort savings• Despite the prospect of significant financial savings from improving energy performance, tenants may resist investments when:<ul style="list-style-type: none">◦ Lease terms are shorter than the anticipated payback period◦ Insufficient knowledge exists on the benefits of energy performance
Best Practices	<ul style="list-style-type: none">• See best practices in Gross Leases and Net Leases tables• Examine removing energy use of tenants who pursue energy efficiency upgrades from the base year/expense stop calculation pool:<ul style="list-style-type: none">◦ Isolates the financial benefits of reduced energy costs to their space◦ Limits "free rider" effect of other tenants benefitting from adjustments to base years, expense stops and/or escalations without sharing in the cost of implementing the improvements• Renegotiate expense stop or base year levels reflecting new operating expenses due to lower utility costs• Establish separate base years or expense stops for utility expenses and other operational costs

Excerpted from www.betterbricks.com

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How do you decide which energy-saving projects to implement?

MYTH #5

"The payback is too long."



"Efficiency enhancements must pay off in less than two years."

SIMPLE PAYBACK PERIOD (SPP)



WHAT IS SIMPLE PAYBACK PERIOD?

- “The amount of time it takes to recover your initial investment through savings”
- Generally expressed in years (or months)
- Computed as the ratio of first cost to Year 1 savings
- It does not take into account the time value of money

$$\text{Simple Payback Period} = \frac{\text{First Cost}}{\text{Savings in Year 1}}$$

SPP Example #1

- Investment of \$10,000 made today
- First-year savings estimated at \$2,500
- What is the Simple Payback Period?

$$\text{Simple Payback Period} = \frac{\$10,000}{\$2,500} = 4.0 \text{ years}$$

THE MANY PERILS OF PAYBACK...

1. Did you calculate the costs and savings properly?
2. What about the Time Value of Money (TVM)?
3. What about the period after the payback?
4. Must the SPP always be $<$ or $=$ the holding period?
5. How do you reflect relative risks of various inflows?
6. Do SPP “rules of thumb” make sense?
7. Whose SPP are you calculating?

RETURN ON INVESTMENT (ROI)



Return On Investment (ROI)

- ROI is the **reciprocal** of SPP

- SPP is first cost divided by YR1 savings
- ROI is YR1 savings divided by first cost

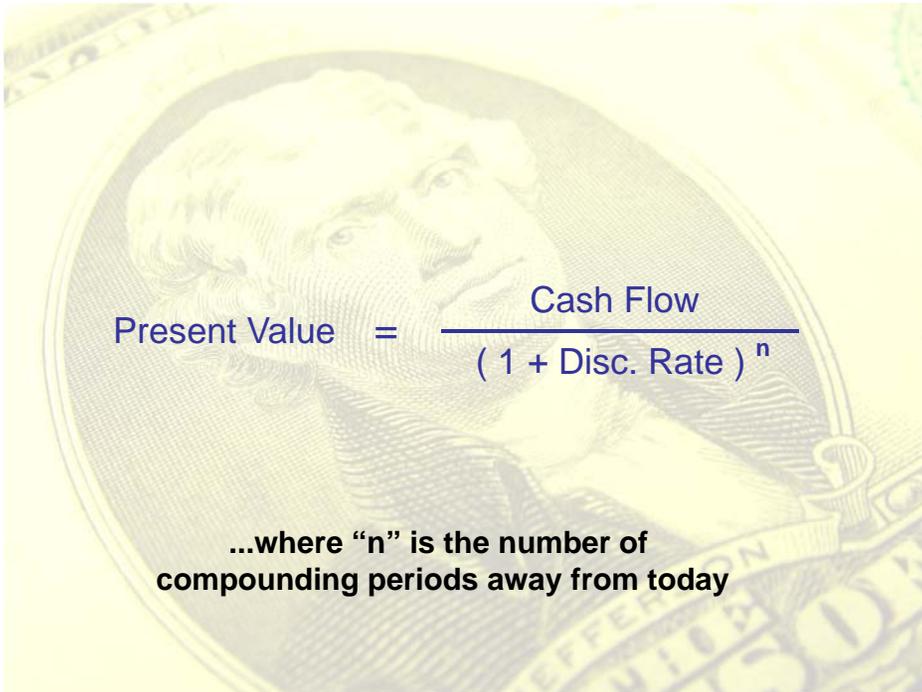
- EXAMPLE:**

\$100,000 investment saves \$25,000 in YR1

SPP = \$100,000 divided by \$25,000 = **4 years**

ROI = \$25,000 divided by \$100,000 = **25%**

How **SHOULD** you be approving which energy-saving projects to fund?



$$\text{Present Value} = \frac{\text{Cash Flow}}{(1 + \text{Disc. Rate})^n}$$

...where "n" is the number of compounding periods away from today

Discount Rate:	10%					
Finance Rate:	10%					
Reinvestment Rate:	10%					
Inflation rate	0%					
	Today	End of YR 1	End of YR 2	End of YR 3	End of YR 4	End of YR 5
"Date"	0	1	2	3	4	5
Cash outflows						
Single investment	\$ (300.00)					
Phased investment						
Financed investment						
SUBTOTAL OUTFLOWS	\$ (300.00)	\$ -	\$ -	\$ -	\$ -	\$ -
Cash inflows						
Rebate/incentive rec'd	\$ -					
Energy savings		\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00
Maintenance savings		\$ -	\$ -	\$ -	\$ -	\$ -
SUBTOTAL INFLOWS	\$ -	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00
TOTAL CASH FLOWS	\$ (300.00)	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00
PV	\$ (300.00)	\$ 90.91	\$ 82.64	\$ 75.13	\$ 68.30	\$ 62.09
NPV	\$ 79.08					
SPP	3.0					
ROI	33.3%					
IRR	19.9%					
MIRR	15.3%					

$$\text{Present Value} = \frac{\text{Cash Flow}}{(1 + \text{Disc. Rate})^{\text{Date}}}$$

Discount Rate:	10%					
Finance Rate:	10%					
Reinvestment Rate:	10%					
Inflation rate	0%					
	Today	End of YR 1	End of YR 2	End of YR 3	End of YR 4	End of YR 5
"Date ____"	0	1	2	3	4	5
Cash outflows						
Single investment	\$ (300.00)					
Phased investment						
Financed investment						
SUBTOTAL OUTFLOWS	\$ (300.00)	\$ -	\$ -	\$ -	\$ -	\$ -
Cash inflows						
Rebate/incentive rec'd	\$ -					
Energy savings		\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00
Maintenance savings		\$ -	\$ -	\$ -	\$ -	\$ -
SUBTOTAL INFLOWS	\$ -	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00
TOTAL CASH FLOWS	\$ (300.00)	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00
PV	\$ (300.00)	\$ 90.91	\$ 82.64	\$ 75.13	\$ 68.30	\$ 62.09
NPV	\$ 79.08					
SPP	3.0					
ROI	33.3%					
IRR	19.9%					
MIRR	15.3%					

LIFE-CYCLE COST ANALYSIS (LCCA)

- Life-Cycle Cost Analysis (LCCA) looks at the total cost of a design choice:
 - First-cost
 - Operation, maintenance and repair costs
 - Financing costs
 - Serviceable life of the design
 - Salvage

WHEN EVALUATING "MUTUALLY EXCLUSIVE" CHOICES...

- EXAMPLE: Which chiller do you specify -- premium-efficiency or standard-efficiency?
- You only need one lighting chiller...
- Funding preference:
 - "Which project has the lowest Life-Cycle Cost?"

WHEN EVALUATING "NON-MUTUALLY EXCLUSIVE" CHOICES...

- EXAMPLE: Audit reveals 10 unrelated EE measures.
- You can do whichever ones you want...
- Funding preference:
 - Make sure that each of the measures is the lowest-life-cycle-cost "finalist" for that measure
 - Eliminate any negative net present value projects
 - Rank the measures in order of highest to lowest Modified Internal Rate of Return (MIRR) or Savings to Investment Ratio (SIR)
 - Fund them in that order until your capital is fully invested

How should you evaluate energy upgrades if you're a landlord?



Capitalization Rate

- A special discount rate used in the "income approach" to appraisal
- The rate of return an investor would expect to receive if the income-producing property were purchased with all cash

$$\frac{\text{Net operating income}}{\text{Capitalization rate}} = \text{Asset value}$$

LINE-BY-LINE VIEW OF IMPROVED EFFICIENCY

SAMPLE PRO FORMA		
Formula	Line Item	Potential Impact
	Potential gross income	Lowering building operating expenses supports higher base rents
(-)	Vacancy and bad debt allowance	Higher efficiency supports better tenant attraction/retention
(+)	Miscellaneous income	
(=)	Effective gross income	
(-)	Operating expenses	Lower energy bills reduce the building's operating expenses
(+)	Operating expense reimbursements	Lower tenant operating expense reimbursements might allow Landlord to recover certain energy-saving capital improvements
(-)	Cap Ex reserve for replacements	In certain situations, the cost of replacing energy-inefficient capital equipment could be passed through to Tenants instead of charging it entirely to the Landlord's capital equipment reserve account.
(=)	Net Operating Income (NOI)*	Higher base rents and/or a lower owner's share of unreimbursed operating expenses support higher NOI
(-)	Debt service	Lower operating expenses support a more favorable debt-to-income ratio and may support more favorable mortgage terms as well
(=)	Before-tax cash flow from operation	Higher NOI and/or lower debt service support higher BTCF

*...and higher NOI supports higher asset value when the property is sold or refinanced

Is investing in energy efficiency more or less risky than other investment alternatives?





MYTH #6

"I'm not sure I should be investing in these newfangled technologies."

"ELECTRONIC LIGHTING BALLASTS HAVE BEEN KNOWN TO FAIL PREMATURELY."

- Electronic lighting ballasts have been available in the US since ~1993
 - Today, electronic ballasts are reliable and far more long-lived than magnetic ballast
- High-efficiency fluorescent bulbs are cost-effective
 - Cost more, but last much longer
 - BTW, the "bulb" is only 3% of the cost of your lighting system!

"AREN'T THOSE NEW FLUORESCENT TUBES MORE EXPENSIVE TO BUY?"

- High-efficiency fluorescent bulbs are cost-effective
 - Cost more, but last much longer (30K hours or more!)
 - New tubes maintain their light output better, which avoids the need to "over-design" the system to provide sufficient light at end of life
 - BTW, the "bulb" is only 3% of the cost of your lighting system!

"DON'T COMPACT FLUORESCENT LAMPS CONTAIN MERCURY, AND ISN'T THAT BAD FOR THE ENVIRONMENT?"

- CFLs contain much less mercury than the mercury emissions they avoid by preventing the unnecessary combustion of fossil fuel

“WOULDN'T INSTALLING SOLAR PANELS BE BETTER FOR MY BUDGET AND THE PLANET?”

- Energy efficiency is a far more cost-effective and sensible first step than doing on-site solar
- Doing energy-efficiency upgrades FIRST allows you to size the solar system properly

“IT'S THOSE DARNED SINGLE-PANE WINDOWS!”

- Weatherstripping windows saves a tremendous amount of energy and is far more cost-effective than replacing the windows themselves.
- Interior storm windows and other barriers are more cost-effective (and they don't impact historical facades)

How many of you have already implemented EE upgrades?

How many of you have actually captured incentives for doing so?



MYTH #7

“The rebate application process is too complicated and time-consuming.”

“POWER OF MAIN STREET ROADSHOW” - MAY 2011

- Pacific Power’s local outreach partners...
 - Performed an on-site energy assessment
 - Also assessed eligibility for a full-scale audit
 - Explored which programs the subject building qualified for (audits, grants, tax credits, Energy Trust incentives)
 - Helped the customer actually complete the applications

MORE ON THE MAY 2011 ROADSHOW...

- Once the upgrades were identified, Pacific Power’s local outreach partners...
 - Helped the subject building identify trade allies to do the work by visiting Energy Trust of Oregon’s website
 - Reviewed all the bids the customer received to ensure they were “apples to apples”
 - Followed-up over a 6-month period to ensure success with this process!

How quickly could you be seeing savings in your (or your customers’) buildings?

ASSISTANCE FINDING A CONTRACTOR...

The screenshot shows the Energy Trust of Oregon website's 'Trade Ally Contractors' page. The page features a search bar at the top right and a navigation menu with categories: RESIDENTIAL, BUSINESS, INDUSTRY + AG, and PUBLIC + NONPROFIT. On the left, there is a sidebar with links to Energy Calculators, Case Studies, Fact Sheets, Build Energy Awareness, Find a Contractor, Find a Solution, and Tax Credits. Below the sidebar, it lists 'Serving customers of: Portland General Electric, Pacific Power, NW Natural & Cascade Natural Gas.' The main content area is titled 'Trade Ally Contractors' and includes a description of trade allies. Below this, there is a form to find contractors near you, with fields for Company, Location, Program (a dropdown menu with 'View All...' selected), Services (a dropdown menu with 'View All...' selected), and Certification (a dropdown menu with 'View All...' selected).

...BY PROGRAM

This screenshot is identical to the previous one, but with a dropdown menu open for the 'Program' field. The dropdown menu lists the following options: Existing Buildings, Existing Homes, Multifamily, Multifamily New Construction, New Buildings, New Homes, Production Efficiency, Solar Electric, Solar Water Heating, Wind, and View All... The 'View All...' option is currently selected.

...BY SERVICES

The screenshot shows the Energy Trust of Oregon website with a search filter for 'Services' open. The filter lists various services such as Air Testing/Sealing, Appliance, Boilers, Builder, Building Design - Commercial and Industrial, Building Design - Residential, Commissioning, Comprehensive Remodeling, Compressed Air Systems, Controls, Duct Testing/Sealing, Greenhouse and Nursery, Heating and Cooling, Home Performance with ENERGY STAR, Industrial Processes, Insulation, Irrigation Systems, Lighting, Motors and Drives, Natural Gas, Natural Gas Equipment, Process Equipment, Rater, Real Estate Professional, Solar Commercial, Solar Residential, Ventiler, Water Heaters - Conventional, and Water Heaters - Tankless. The 'View All...' option is selected at the bottom of the list.

...BY CERTIFICATION

The screenshot shows the Energy Trust of Oregon website with a search filter for 'Certification' open. The filter lists various certifications such as BPI Building Analyst, BPI Envelope Professional, BPI Heating Professional, Check Met Heat Pump Commissioning, NAB Certified Energy Practitioner, North American Technician Excellence, ODOE Duct Sealing Tax Credit Technician, ODOE Heat Pump Tax Credit Technician, ODOE Solar Electric Tax Credit Technician, ODOE Solar Water Heating Tax Credit Technician, and Performance Testing. The 'View All...' option is selected at the bottom of the list.

When should you start thinking about pursuing efficiency upgrades?



ENERGY EFFICIENCY IS MORE COST-EFFECTIVE

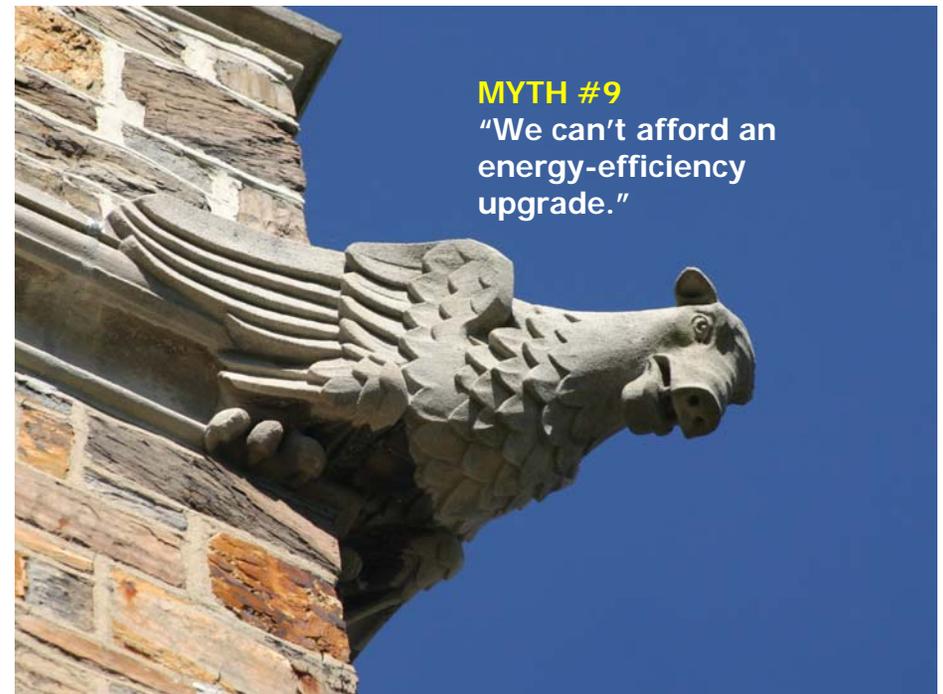
- Energy efficiency should be top of mind...
 - New construction
 - Remodeling
 - Tenant fit-outs
 - Planned or emergency replacements

ENERGY EFFICIENCY IS MORE COST-EFFECTIVE

- The most cost-effective time to increase efficiency is when you're already doing something else
 - Cost difference between "standard" and "premium" efficiency equipment is less than you think
 - Incremental rebates/incentives help defray the cost
 - Life-cycle cost benefits can be significant

A WHOLE NEW TAKE ON "VALUE ENGINEERING"

- Typical "value engineering" removes features at the last minute to reduce "first cost"
- True "value engineering" should **ADD** first cost wherever it can be proven to reduce life-cycle cost:
 - Higher rebates/incentives for the more efficient model
 - Lower energy cost over time
 - Lower repairs/maintenance over time
 - Longer equipment lifetime
 - Other factors...



MYTH #9
"We can't afford an energy-efficiency upgrade."

GUESS WHAT? YOU'RE ALREADY PAYING FOR IT!

- What is your utility bill now?
- What would your utility bill be AFTER the upgrade?
- Would your monthly energy savings be more than what your monthly payment would be if you borrowed the money to pay for the upgrade?
 - Remember to consider any rebates, incentives, tax benefits!

YOU'RE SPENDING THE MONEY ANYWAY...

- "Capital Budget"
 - Used to pay for long-lived equipment where the use spans multiple budget years (e.g., HVAC and lighting equipment)
- "Operating Budget"
 - Used to pay for expense categories that are deductible in the current tax year (e.g., utilities)

Sometimes it's as simple as moving money from the Operating Budget to the Capital Budget...



MYTH #10
"We'll do it sometime in the future."

WHY DO FOLKS DELAY DOING EE UPGRADES?

- "New technologies are coming, and they'll be even more efficient"
- *While technologies do improve over time, you could pay for the current generation of technology through savings way before the new one becomes available*

WHY DO FOLKS DELAY DOING EE UPGRADES?

- “We’ll wait until next year when we’ll have a little more cushion to afford it”
- *If you don't upgrade, you're “paying for” the improvement anyway with unnecessarily high utility bills*

AGENDA

- Why should you be interested in energy efficiency?
- How much energy could *your* buildings save?
- Replacing myth with math and motivation
- Sector-specific energy-efficiency tips
- Key take-aways...

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Who has an energy-efficiency success story to share?

The screenshot shows the SBA.gov website interface. At the top, there is a search bar and navigation links for 'Home', 'Starting & Managing a Business', 'Loans & Grants', 'Contracting', 'Counseling & Training', 'SBA Direct', and 'For Lenders'. The main content area is titled 'For Specific Businesses' and features a list of links for various business types, including 'Energy Efficiency for Auto Dealers', 'Energy Efficiency for Construction Contractors', 'Energy Efficiency for Grocery and Convenience Stores', 'Energy Efficiency for Home Based Businesses', 'Energy Efficiency for Lodging', 'Energy Efficiency for Small and Medium-Sized Manufacturers', 'Energy Efficiency for Restaurants', and 'Energy Efficiency for Retail Stores'. A sidebar on the right contains a 'SBADirect' section with a search bar and a 'Join the Community!' button, along with a 'Most Visited Articles In: Managing a Business' section listing topics like 'Making Decisions', 'Managing Employees', and 'Forecasting for Growth'.

AUTO DEALERS

- Auto dealerships use more energy per sq. ft. than a typical office building
- National Automobile Dealers Association Energy Stewardship Initiative
- A Dealer Guide to ENERGY STAR® Putting Energy Into Profits

Automobile Dealership Sure Savers			
	ENERGY STAR® Qualified Products Available	New Construction or Major Renovation	Simple Upgrade to Existing Facilities
Insulation		✓	
Electrical receptacle seals		✓	✓
High-efficiency heating and cooling equipment	Yes	✓	✓
Cool roofing	Yes	✓	
Multiple pane, low-e windows with inert gas fill	Yes	✓	✓
Engage in heating and cooling equipment maintenance contracts and seasonal tune-ups		✓	✓
T5 fluorescent lamps and electronic ballasts and investigate the potential for T5 lamps for all low-bay applications		✓	✓
Metal halide or even more efficient TSHO lamps for exterior, security, and high-bay lighting		✓	✓
Compact fluorescent fixtures in place of all recessed can fixtures		✓	✓
Photocell sunrise/sunset controls on exterior light fixtures		✓	✓
Efficient exit signs	Yes	✓	✓
Occupancy sensors for all storage, conference, and restrooms		✓	✓
NEMA premium motors and variable speed drives		✓	✓
Automatic door closers on all exterior bays and pedestrian doors		✓	
Compact fluorescent light bulbs	Yes	✓	✓
Efficient office equipment, electronics, and appliances	Yes	✓	✓
Low-flow faucets in all lavatories		✓	✓

GROCERY AND CONVENIENCE STORES

- 10% reduction in energy costs for a supermarket can boost net profit margins by 16%
- Lighting, HVAC, appliances, and refrigeration
- Refrigeration
 - Keep doors shut
 - Check temperature settings
 - Clean cooling coils
 - Check door seals
 - Maintain equipment



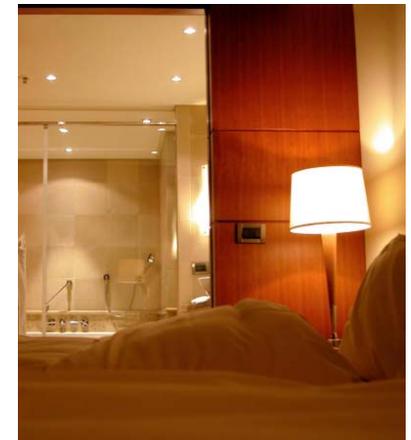
LODGING

- Housekeeping
 - Turn off lights, televisions, and radios, heating and cooling when room is unoccupied
 - Close window drapes
- Maintenance
 - Repair leaking water fixtures
 - Install timers on bathroom headlamps
 - Replace light bulbs with more efficient ones
 - Regularly check and clean filters and coils
 - Seal leaks to outside and install weather stripping



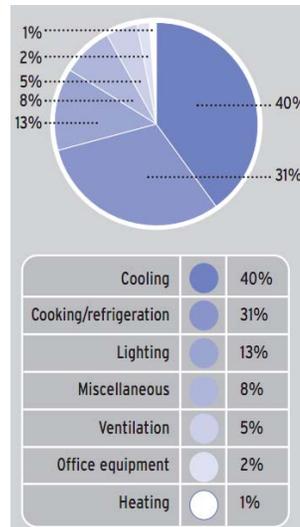
LODGING

- Management
 - Activate stand-by mode on computers
 - Opt for ENERGY STAR labeled products when purchasing new equipment
 - Install Energy Control Systems
 - Close entire wings or floors during periods of low occupancy and reduce lighting and HVAC systems
 - Assign guests to adjoining rooms to allow heating and cooling of rooms to act as a buffer



RESTAURANTS

- ENERGY STAR Restaurant Guidebook and Fact Sheet
- Green Restaurant Association
- Food Service Technology Center (www.fishnick.com)



SMALL/MEDIUM MANUFACTURERS

- Motors and pumps
 - Think about efficient motors when making purchase decisions
- Compressed air
 - Eliminate leaks, verify and reduce pressure
- Steam generation
 - Maintain steam traps, eliminate leaks, insulate, tune up boilers regularly
- Process heating
 - Insulate, recover waste heat



RETAIL STORES

- A 10% reduction in energy costs for a full-line discount retailer can boost net profit margins by as much as 1.55%
- Focus on:
 - Building shell
 - HVAC
 - Lighting
 - Office equipment and appliances



TYPICAL MEASURES... BUILDING ENVELOPE

- Seal air leaks to stop drafts
- Add insulation to block heat loss in winter and heat gain in summer
- Choose ENERGY STAR qualified windows when replacing windows.



For more info: <http://www.sba.gov/content/building-shell-improvements>

TYPICAL MEASURES... LIGHTING

- Compact fluorescent lamps (CFLs)
 - Save >65% energy and last for 10,000 hours!
- Self-ballasted ceramic metal halide PARs
 - Save >65% energy and last for 12,000 hours!
- High-efficiency T8 (and T5) fluorescents w/electronic ballasts
 - Half the power of standard T12 lamps/ballasts PLUS longer life, no flicker, no hum



For more info: <http://www.fypower.org/com/sbs/retail.html>

TYPICAL MEASURES... LIGHTING (CONT'D)

- Occupancy sensors and dimmers
 - Can reduce lighting costs by 40% or more in break rooms, restrooms and conference rooms



For more info: <http://www.fypower.org/com/sbs/retail.html>

TYPICAL MEASURES... HVAC

- New EE A/C or furnace will cut energy costs up to 20%



For more info: <http://www.fypower.org/com/sbs/retail.html>

TYPICAL MEASURES... HVAC

- Install an ENERGY STAR programmable thermostat to automatically control temperature settings and save 10% to 70% on heat and cooling costs.



For more info: <http://www.fypower.org/com/sbs/retail.html>

TYPICAL MEASURES... HVAC

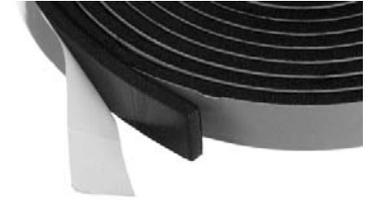
- Use recommended thermostat set points.
 - Every degree of cooling increases energy use by 4% to 5%
 - Cooling to 73°F instead of 76° uses 12% to 15% more energy



For more info: <http://www.fypower.org/com/sbs/retail.html>

TYPICAL MEASURES... HVAC

- Increase the efficiency of a heating and cooling system by preventing heat gain or loss with insulation, weather-stripping around doors, and shades, awnings or tinting over windows



For more info: <http://www.fypower.org/com/sbs/retail.html>

AGENDA

- Why should you be interested in energy efficiency?
- How much energy could *your* buildings save?
- Replacing myth with math and motivation
- Sector-specific energy-efficiency tips
- **Key take-aways...**

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- Are you considering ALL the benefits of energy efficiency?
- Are you preemptively addressing the myths that can stymie worthwhile EE projects?
- Can you escape the clutches of simple payback period when selecting which projects to fund?
- Are you using all the resources available to help you advance EE?
- Are you communicating the value in ways that challenge and engage?

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Any additional questions?



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