



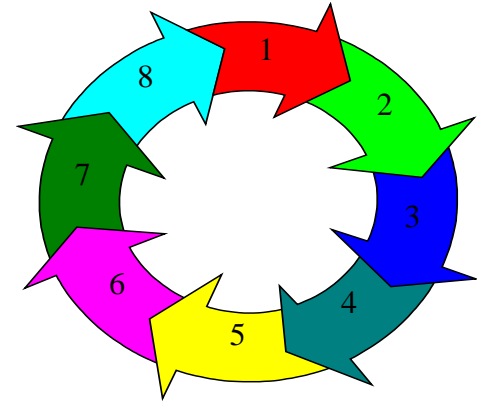
Unlocking Your Building's Potential: What You Need to Know to Create Sustainable Sustainability

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Facility Engineering Associates, P.C.

September 22, 2010

Agenda

- The impact of *Sustainable Facility Management*



- The *five-things* you need to know

The things you really need to know!

- *Conservation and Reduction through Communication and Education*



Sustainable Facility Management

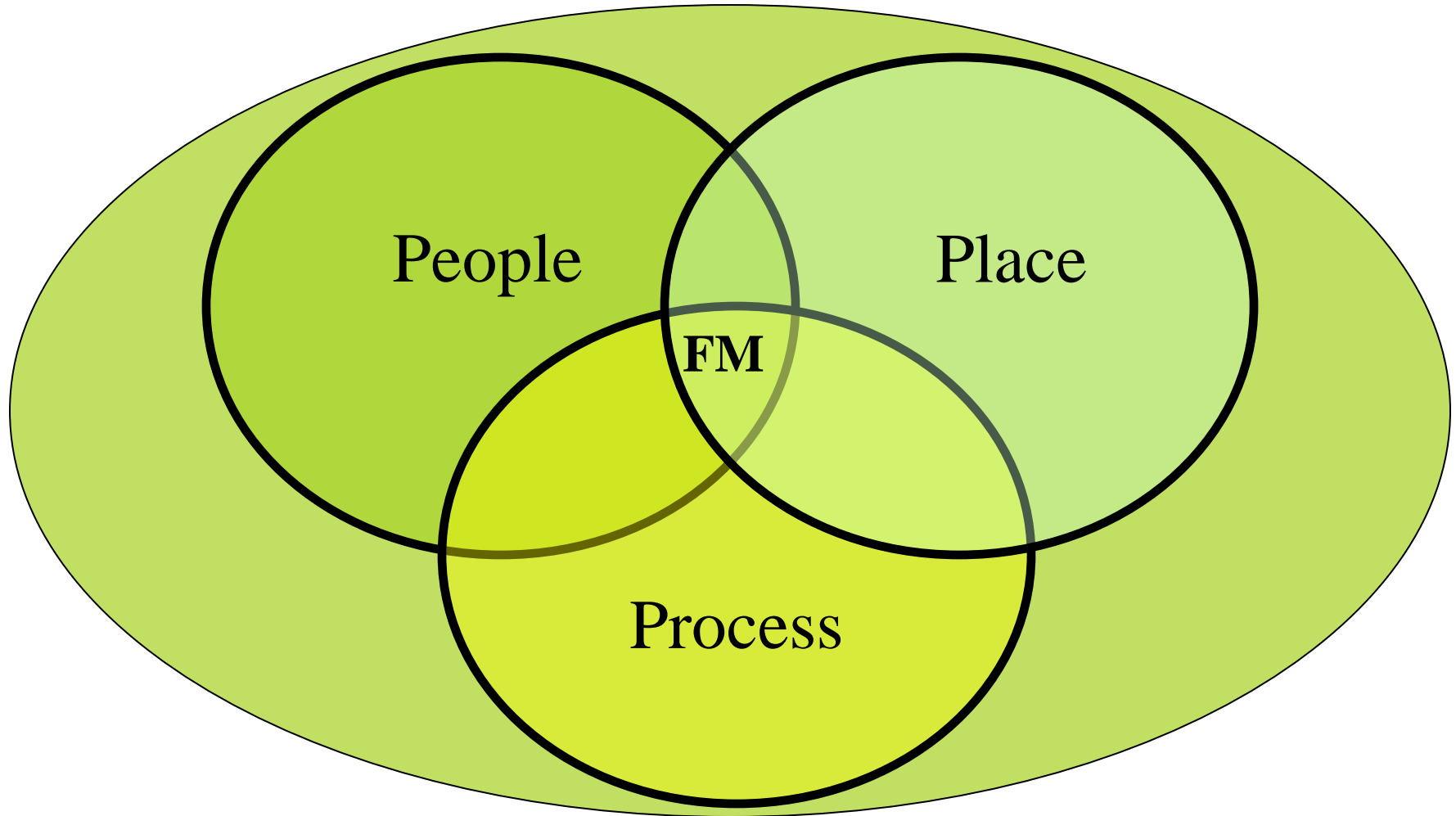
- Sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs [*Brundtland*]

*World Commission on Environment and
Development: Our Common Future
– April 1987*



- Sustainable Facility Management is a process of integrating the people, place and business of an organization that optimizes economic, environmental, and social benefits of sustainability

Impact: Sustainable Facility Management

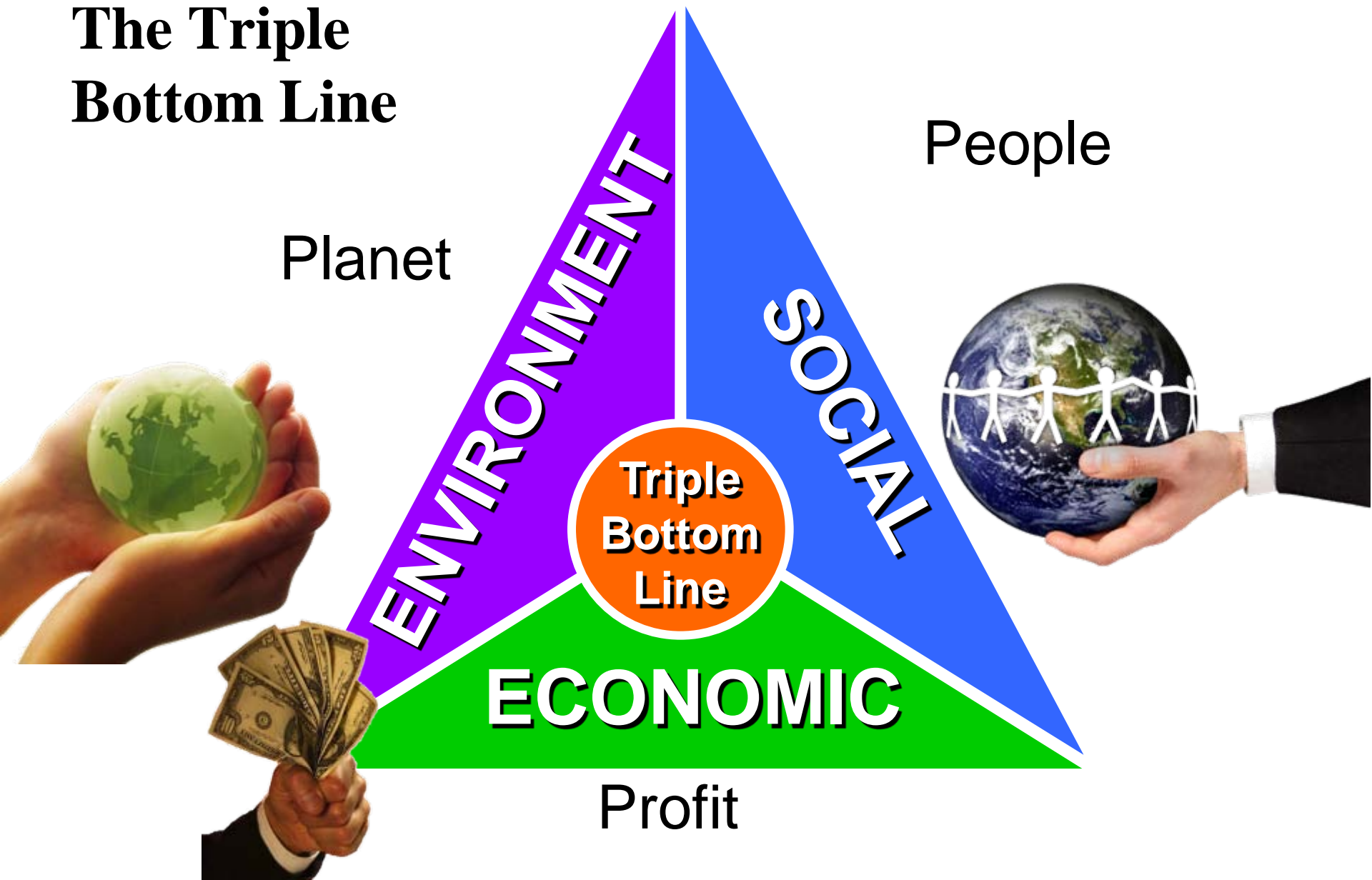


Sustainability

Sustainable Facility Management is a process of integrating the people, place and business of an organization that optimizes economic, environmental, and social benefits of sustainability

Impact: Sustainable Facility Management

The Triple Bottom Line





Why Should You Care?

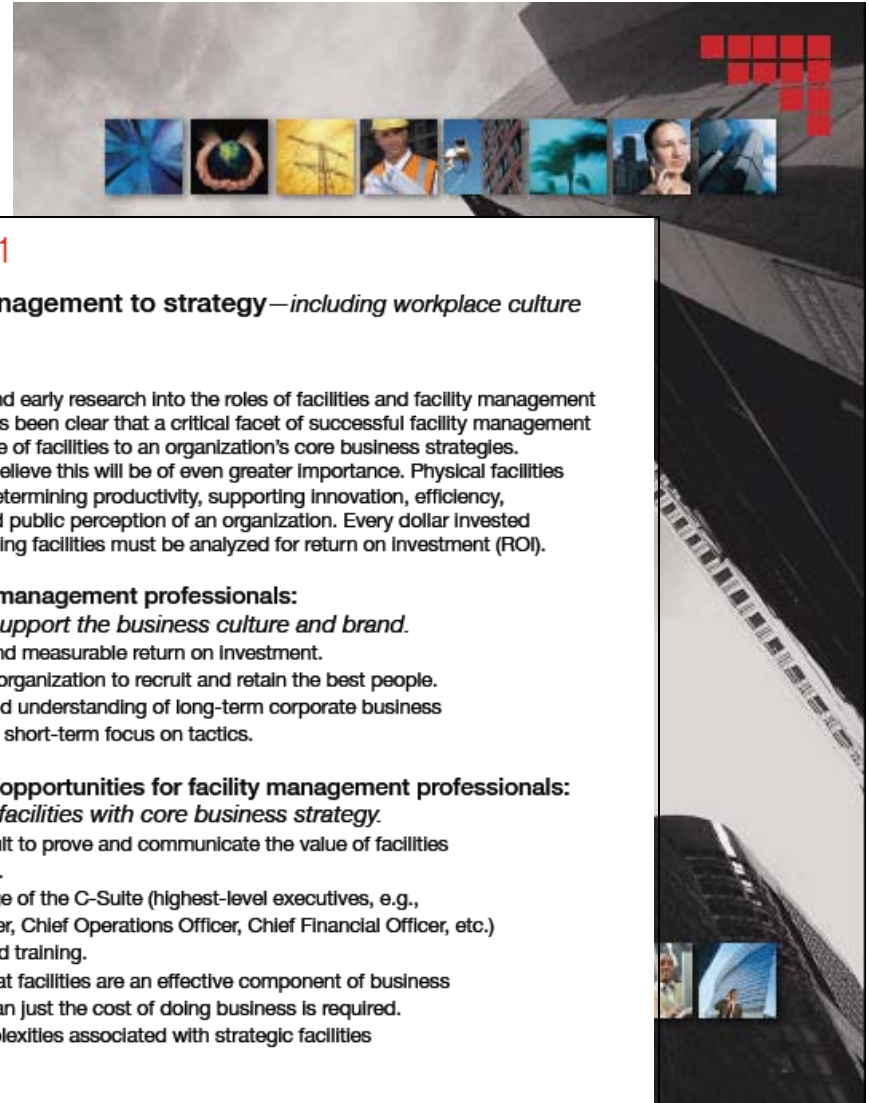
- **You** are being pressured by the demand to deliver better results & greater value, but at lower costs
- **You** & your company are being compelled to respond to the need for sustainable facilities
- **You** have much more influence over a facility's effect on the environment & the people in the buildings than those who designed/built them

What's Your Motivation?



Getting to know your facility

First: Know your organization!



TREND NUMBER 1

Linking facility management to strategy—including workplace culture and branding

Since IFMA's formation and early research into the roles of facilities and facility management professionals began, it has been clear that a critical facet of successful facility management is the ability to link the role of facilities to an organization's core business strategies. In the coming years, we believe this will be of even greater importance. Physical facilities can have a large role in determining productivity, supporting innovation, efficiency, employee satisfaction and public perception of an organization. Every dollar invested in improving and maintaining facilities must be analyzed for return on investment (ROI).

Demands on facility management professionals:

Ensure that facilities support the business culture and brand.

- provide a sufficient and measurable return on investment.
- help differentiate the organization to recruit and retain the best people.
- have a clear vision and understanding of long-term corporate business strategy rather than a short-term focus on tactics.

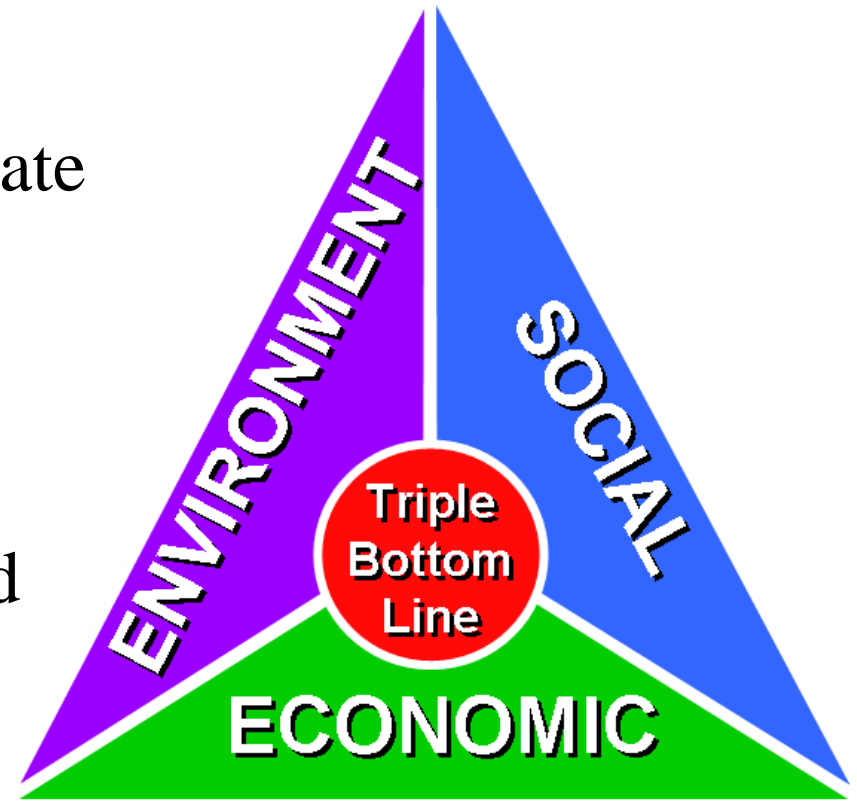
Learning challenges/opportunities for facility management professionals:

Importance of linking facilities with core business strategy.

- it is sometimes difficult to prove and communicate the value of facilities (constantly changing).
- speaking the language of the C-Suite (highest-level executives, e.g., Chief Executive Officer, Chief Operations Officer, Chief Financial Officer, etc.) may require diversified training.
- a shift in the belief that facilities are an effective component of business strategy and more than just the cost of doing business is required.
- understand the complexities associated with strategic facilities planning/budgeting.

Getting to know your facility

- Environmental
Resources, Pollution, Climate
- Social
People, Community, World
- Economic
Money, Money, Money



Value of Sustainable FM

- Lower Costs

“Since green buildings are more energy efficient, use less potable water, and reduce burdens on landfills, their utility costs are less than non-green” - Mychele Lord

- Healthier Environment

*Increased comfort + Increased IAQ =
Increased productivity*

- Increased Asset Value

*Reduced costs + Greater market share =
Greater value*

Value of Sustainable FM

Economic - Increased Asset Values

↓ Occupancy Costs

↑ Tenant Retention

↑ Occupancy

↑ Rent Revenue

↑ Increased Cash Flow

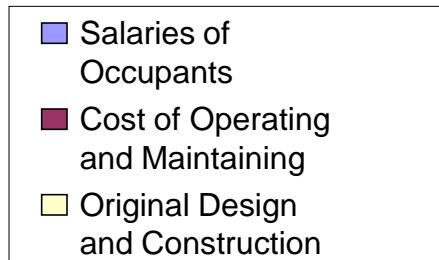
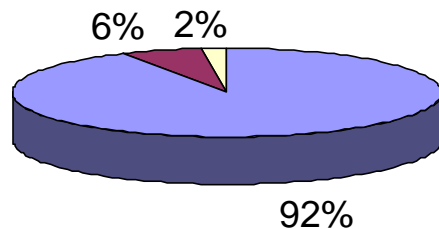
The facilities simply operate better and last longer.

Impact: Sustainable Facility Management

The Value of FM

Typical design and construction costs account for only about 2% of an organization's total cost to exist.

Life-Cycle Costs of a Facility



The Cost of Productivity

Average annual cost for Personnel: \$300-600/sf

For facilities: \$20/sf

For energy: \$2.50/sf



The Link Between TBL and SFM

Initiative	Intent	Environmental Benefit	Economic Benefit	Social Benefit
Reflective Roof	↓ Heat Island Effect	+/-	+/-	+/-
Low H2O Fixtures	↓ Water Use	+	+	+/-
Commissioning	↓ Energy Use	+	+	+
Recycling	↓ Landfill Waste	+	-	+/-
Lighting Retrofit	↓ Energy Use	+	+	+/-
More Windows	↑ Day lighting	-	-	+
Education	↑ Knowledge	+	+/-	+

Getting to know your facility

Which initiatives are right for you?

Improve Energy Efficiency

Greater Water Efficiency

Superior Indoor
Environmental Quality

Purchasing of Sustainable
Materials & Resources

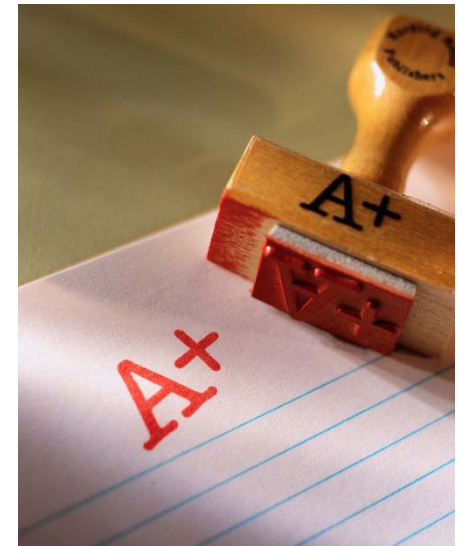
Achieve Green Rating

Emission Reduction



The *five-things* you need to know


1. Energy Consumption
2. Water Usage
3. What goes in?
4. What comes out?
5. Indoor environment quality



#1 Energy

1. Coal
2. Natural Gas
3. Oil
4. Uranium
5. Wind

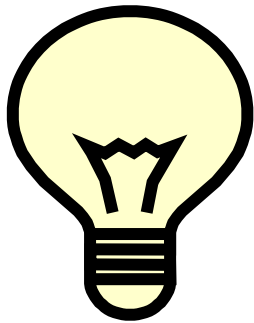


The 6th Fuel  Energy Efficiency

#1 Energy

The Importance of Energy Efficiency Equipment and Behavior

- Lighting
- Heating and Cooling
- Plug Loads



Energy Management Strategy Tools



Energy Audits



ENERGY STAR



Re-Commissioning

#1 Energy



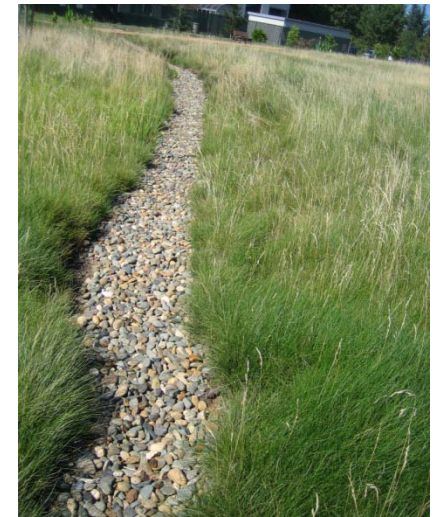
What's It For?

- Standardized Metric of Energy Performance
- Compare Efficiency Across Country (Scale of 1-100)
- Normalize Energy Consumption

ENERGY STAR buildings:

- Use 35% less energy than average buildings
- Cost \$0.54 less per square foot to operate when compared to an average building (\$2.10/sf less than a below-average building)
- Prevent 25 billion pounds a year of greenhouse gas emissions, relative to typical facilities

#2 Water



Domestic

Process

Irrigation



#2 Benchmarking Water

- Establish a Baseline for the Facility
 - USGBC Baseline
 - Occupancy
 - Uniform Plumbing Code (UPC) 2006 or International Plumbing Codes (IPC) 2006
- Establish Water Usage for the Facility
 - Actual Water Usage
 - Determined through utility bills (fixture metering)
 - Theoretical Water Usage
 - Occupancy
 - Current building fixtures

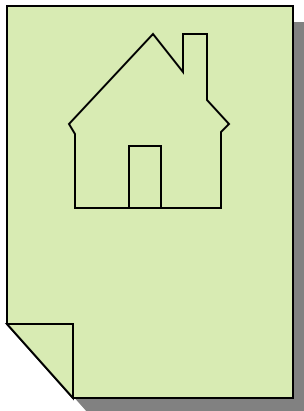
Improving Water Efficiency

- Improving water efficiency through plumbing fixture replacement
 - Replace older high-flow fixtures with ones that meet current requirements
 - Dual flush valves on water closets – *Full flush 1.6 gpf or half flush 0.8 gpf*
 - Install high-efficiency fixtures that exceed current requirements
 - High-Efficiency Water Closets – *1.3 gpf or less*
 - High-Efficiency Urinals – *Can use 1 pint or less*
 - Waterless Urinals
 - Ultra Low-Flow Shower Heads - *1.5 gpm or less*
 - Install low-flow aerators – *1.0 gpm to 0.5 gpm*
 - Use alternative water sources – *Grey water*



#3 What goes in?

- Ongoing consumables
- Durable goods
- Facility alterations/additions
- Lamps
- Food service



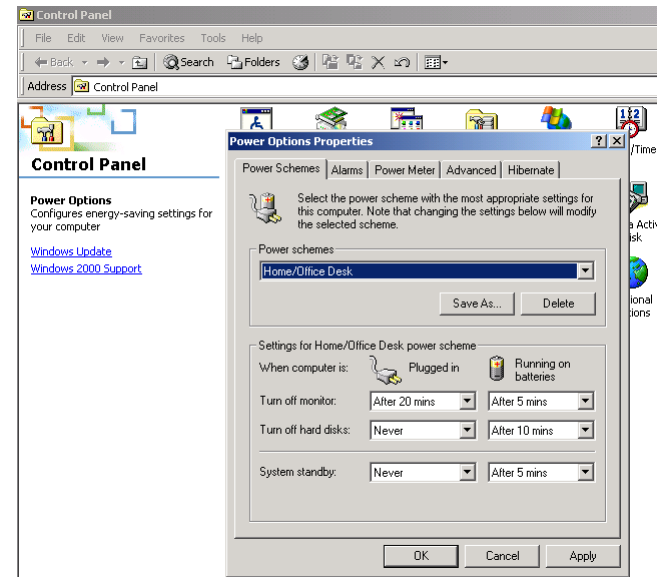
#3 What goes in?

Durable goods and efficient work practices

- Set your copiers to copy on both sides by default.
- Transmit electronic files, not paper files when possible.
- Reduce total number of copiers



Implementing PC
Power Management
can save up to \$90 per
PC annually

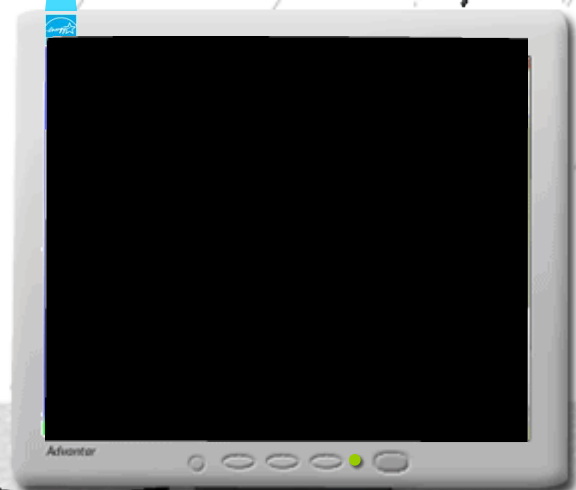


Minimizing Computer Energy Use

Energy 
LEARN MORE AT
energystar.gov



ZZZZZZZ...



Slide Courtesy of ENERGY STAR

#3 What goes in?

Sustainable Purchasing Verification Programs



1992

www.energystar.gov



1989

www.greenseal.org



1988

www.ecologo.org/en/



Voluntary Energy Efficiency
Labeling Scheme

<http://www.emsd.gov.hk/>

#4 What comes out?

What is Your Waste Stream and Why Should You Care About It?

It is the overall flow of the wastes from the building to a landfill, incinerator, or other disposal site.



- Paper
- Glass
- Toner Cartridges
- Cardboard
- Food Waste
- Metals
- Plastics
- Batteries



Waste Management

- Waste Audit (Baseline)
- Identify Improvement Opportunities
- Recycling Program

Paper

Food Waste

Metals

Plastic

Batteries

Cardboard

Glass

- Educate Occupants
- Collaborate with Janitorial Contractor



#5 Indoor Environment

- Proper Operations and Maintenance
- Occupant health and productivity
 - Reduced absenteeism
 - Higher productivity
 - Improved recruiting
 - Increased retention





#5 Indoor Environment

Green Cleaning Programs

- Green products
- Sustainable equipment
- Dilution strategies
- Standard operating procedures
- Training
- Strategies to promote hand hygiene
- Guidelines for safe handling of chemicals (spill prevention, etc.)
- Daytime cleaning (Sprint)
- Occupant feedback

Agenda

- The impact of *Sustainable Facility Management*

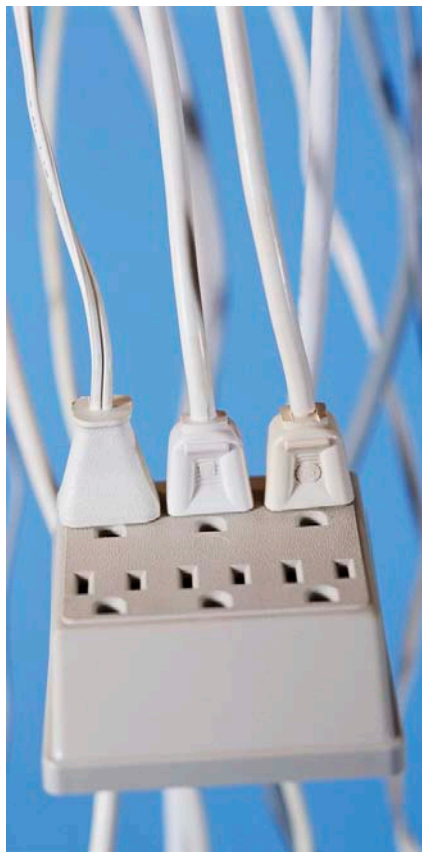


- The *five-things* you need to know

- *Conservation and Reduction through Education and Communication*



Conservation and Reduction



Saves Energy



**Reduces GHG
Emissions**



Saves Water



Saves Money

Conservation and Reduction

Common FM Questions:



How Long Will This Take?

How Much Will It Cost?



Where does your money come from?

Using the right tools

Tools for SFM

- Strategy (TBL)
- Energy Mgt.
- Water Conservation
- Recycling Program
- Finance



“The first tool is to get educated” – Brenna Walraven,
5/13/09

Know Your Numbers

How to Improve

Based on Initial Rating



1–49 New equipment & best practices

Capital Budget

50–74 Best practices & equipment upgrades

Operating Budget

75–100 Congratulations! Build on your success

Tools: Building Rating Systems



A B C



Keep it simple but focused

- Develop a set of strategic objectives that aligns with your organization or your client's
- Identify your resources available to achieve your objectives
- Form your sustainability team
- Track your progress
- Celebrate and communicate your success!

Goal Setting: Who, What, Next Steps?

Sustainable Café Meeting

Visions Café Dining

1/08/08

Attendees: George Morales, Rob Kvetik, Gail Yee, Cyndi Smith, Laurel Bane

Action Items/Decisions

WHO	WHAT (DESCRIPTION)	NEXT STEPS
George	<ul style="list-style-type: none">Sustainable GOAL: A minimum of 25 % of combined food and beverage purchases are from the following sources: USDA Organic, Food Alliance Certified, Rainforest Alliance certified, Protected Harvest, or Fair trade Certified. <p>NOTE: The café will need to provide documentation for all Café food and beverage purchases from December 1, 2007 through March 1, 2008.</p>	Will focus on big ticket items such as Starbucks coffee. George will find out what percent of Coffee meets the Fair Trade Certification.
Rob	<ul style="list-style-type: none">Determine purchasing tracking process at the corporate level	
Cyndi/ Laurel	<ul style="list-style-type: none">Coordinate with other Businesses in the area- (Intel, Composting Program, Cal Pers, Cal EPA, etc)Kristin Rhodes- Cal EPA	Cyndi to send out a blast email to IFMA, Corp Fac, Council about café Programs.

Tools: Tracking Your Progress

Sustainable Cafe Purchase Tracking

Date Purchased	Item	USDA Organic	Food Alliance Certified	Rainforest Alliance Certified	Protected Harvest Certified	Fair Trade Certified	Costs
November							
11/8/2007	10 lbs Arugla	√	√				\$10.00
11/8/2007	2 cases OdawallaBeverages	√				√	\$36.00

Sustainability Balanced Scorecard

Internal Processes	Organizational Goals	Sustainability Objectives	Initiatives	Measures	Targets	Current Status
	3. Operate Efficiently 4. Effectively allocate resources to maximize utilization	1. Become Carbon Neutral	<ol style="list-style-type: none"> 1. Calculate Emissions Inventory 2. Purchase Energy Star Equipment 3. Purchase Offsets 	Decrease in Carbon Emissions	15% Decrease	12%
		2. Decrease Water Consumption	<ol style="list-style-type: none"> 1. Install waterless urinals 2. Install automatic flushers. 	Decrease in Water Consumption	10% Decrease	0%
		3. Achieve Energy Star Certification	<ol style="list-style-type: none"> 1. Lighting retrofit project. 2. Perform an energy audit. 3. Purchase energy star products. 	Decrease in Energy Consumption	20% Decrease	22%
		4. Decrease Waste	<ol style="list-style-type: none"> 1. Institute a double sided printing policy. 2. Provide recycling bins at every desk. 	Decrease waste to landfill	10% Decrease	12%

Thank You!

**“Hope is not a strategy....You need to
have a plan
to create Sustainable Sustainability.”**

Teena Shouse, CFM, IFMA Fellow



www.feapc.com