Hotel Water Conservation
ESRC NEWMOA and WSPPN
2010
Today’s Agenda

Overview of Industry & Context

Business Basics

Training and Behavioral Change

Don’t be Afraid of Toilets & other Technologies
Why I’m Here

• I am all about the food. And I mean all....
And Nature...
And Anti-Litter... (Creating Beauty)
Sustainable Tourism Drivers

• Everything is Now Green (even if it isn’t)

• Corporate Social Responsibility

• State green hotel programs

• EPA Pollution Prevention Plan focusing on hospitality & National Green Meeting/Conference Standards by 2010

• Scary news: Slow Disasters - Tourism late-ish in arriving at sustainability
Sustainability is now sexy

“He’s not much fun, but he’s made entirely from recycled materials.”
Industry Overview

- Vast range in size and ownership, from small B&Bs, mid-range franchises to 7,000 room resorts in Las Vegas

- 30,000 companies with 50,000 locations

- $90 billion in annual revenue

- Key Metrics (concerns): retail sales, occupancy rates, average room prices, **RevPAR** (which is revenue per available room or occupancy rate x average daily room rate)

  PR/goodwill/reputation
Industry Overview

• Managers are often well trained but very few have a background in sustainable business or natural resources
• Larger hotels operate on a department basis: housekeeping/rooms engineering, F&B, Executive, Front Desk, Sales and Marketing
Change Starts with Learning

Healthy Organizations Adopt Change More Efficiently:

• Supply resources and time to staff
• Provide context
• Support risk-taking
• Reward with incentives
• Shows respect and empower learning
Healthy Organizations Adopt Change More Readily

Figure 1: Core Learning Capabilities of Organizations

Aspiration
- Personal Mastery
- Shared Vision

Understanding Complexity
- Systems Thinking

Reflective Conversation
- Mental Models
- Team Learning

WHOLE BUSINESS AND SECTOR APPROACH
Triple Bottom Line: More than just Money
Partner with a Business Professional and Market The Strategic Business Case

Worldviews Tend to Create Narrow Viewpoints

Engineer-Executive Chasm is a Core Barrier to adopting sustainable technologies and processes

You must, as a P2 provider, learn the language of the BANK
Engineer, Meet Executive
Every Skill has its Language

1. Each person has a unique worldview: product of experience, training and location
2. Many tourism staff speak languages other than English
3. The language of an engineer and an executive can be quite different

- **Solution?**
- Cross functional teams
- Learn each other’s skill-languages
- Use visual icons to train or hire translation services
The Language of The Executive

FULFILLMENT

Quit your complaining. Black is a slimming color.
Move Beyond First Cost Thinking (and talk)

Talk about Long Term Asset Value

Increased Net Operating Income

Investments in Operations and Maintenance

Integrate Executives into Engineering Meeting Early in process
Cross Functional Groups “Rock”

Key for community-based planning and environmental planning for lodging
Training- Adults Learn by Doing
Hotel Green Teams

• Empower them
• Give Them Time and Resources
• Secure Upper Management Support
• Seek genuine zeal
• Use pilot projects
• Be organized - use targets and performance measures
• Communicate - both internally and externally and celebrate all successes
Water Conservation in Context

• Part of an overall Sustainability Plan

• Developed with a Cross-Departmental Green Team

• Is contained in a Strategic plan with targets and associated strategies and evaluation

• Incorporated into training and placed in a Knowledge Management System
Step by Step

- Baseline assessment
- Strategic Plan while creating Green Team
- Start small and then expand into more ambitious goals
- Track success: cost, value, productivity, **GHHI** (Gross Hotel Happiness Index), reduced maintenance and operational costs and good PR and reputational value.
Leak Detection and O&M = Good Outcomes
O&M Gift from the Feds

FEDERAL ENERGY MANAGEMENT PROGRAM

Release 3.0
Operations & Maintenance Best Practices
A Guide to Achieving Operational Efficiency

August 2010
Water Use in Hotels
Water Use in Hotels

End Uses of Water in Hotels and Motels

- **Domestic/Restroom**: 30%
- **Laundry**: 16%
- **Cooling and Heating**: 16%
- **Swimming Pools**: 11%
- **Landscaping**: 12%
- **Kitchen**: 14%
- **Other**: 1%

*Source: EPA WaterSense*
Water Use in Hotels

• #1 Rooms, #2 laundry, #3 kitchen and landscaping

• 100-199 rooms: 159 g/r/d and 200-700 rooms jumps to 254 g/r/d

• Overall potential for water conservation is between 17-23%, with laundry the biggest savings potential between towel linen programs and efficient equipment
Watergy

The Water-Energy Nexus

Major Players

• LEED (USGBC)

• EPA’s Water Sense Program

• EPA’s Energy Star (Portfolio Manager- Hospitality)

• DOE’s FEMP (Fed. Energy Mgmt Program)

• Whole Building Design Guide (Nat’l Inst. Building Sciences)

• AWE and AWWA (associations)
The Guest Room... and the scariest thing about it
The Alternative Perspective...
The Guest Bathroom

• Toilets: 1.6 gpf or less: HETs, ULF, dual flush: Be careful and know the sewer infrastructure and train staff and guests on use

• Urinals: 1.0 (HEU) or waterless

• Showerheads: 1.5 gpm: Consult peers- try to avoid the multiple shower head if you can

• Faucet aerators: 0.5gpm great water savers but beware of automatic controls (evidence is sketchy that they save water)
Towel Linen Programs Fab... IF they work

• Programs offer guests opportunity to have linens and towels washed every 3 days

Southern California Has a Water Shortage

The water reserve levels in Southern California are at an all-time low and we're getting drier. We need your help to save water.

It is our policy to launder guest room linens every three days for those guests staying multiple nights. If you would like your linens changed more frequently, we are happy to honor your request.

If you wish to have your bed linens changed, please place this card on your pillow in the morning.

By reusing your linens, you can help us save 4,000 gallons a month.
Water Champ Program in Florida

Savings/Room/Year (gallons)

<table>
<thead>
<tr>
<th>Number of Rooms</th>
<th>Savings</th>
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<tbody>
<tr>
<td>200-1000</td>
<td>6,403</td>
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<tr>
<td>100-199</td>
<td>4,316</td>
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<td>20-49</td>
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<td>1-19</td>
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Common Area Bathrooms
Laundry
# Ozone in Laundries

## Traditional Cycle

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<tr>
<th></th>
<th>Water</th>
<th>Chemical</th>
<th>Electrical</th>
<th>Natural Gas</th>
<th>Labor</th>
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<tbody>
<tr>
<td></td>
<td>Total Avg Per Load -</td>
<td>Total Avg Per Load -</td>
<td>Total Avg Per Load -</td>
<td>Total Avg Per Load -</td>
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<tr>
<td></td>
<td>Gallons</td>
<td>Ounces</td>
<td>kWh</td>
<td>Therme</td>
<td>Minutes</td>
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<td></td>
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<td>Cost Per Year</td>
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<td>$1,484.42</td>
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## Ozone Cycle

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<td>$1,033.48</td>
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Food and Beverage
Kitchen and Dining Savings

- Connect Kitchen Ice Machines to Glycol Loop or Replace with Air Cooled Models
- Purchase Just in time to Avoid Thawing with Water
- Leak Detection Program
- Pre Rinse Spray Valve Use
- New Warewashers on Line
Pre Rinse Spray Valves: Your new BFF

- **Squeeze handle**: Manual control for water

- **Clip**: Locks handle in the “on” position

- **Nozzle**: Releases pressurized water for rinsing dishes

- **Dish guard bumper**: Prevents accidental bumping to protect delicate dishes or glasses
Resident Evil... Bottled Water
As a part of our dedication to water conservation, we will be serving WATER UPON REQUEST ONLY.

Thank you.
Cooling Towers

• Cooling towers lose a lot of water through evaporation, blowdown.

• Evaporation leaves *suspended solids* which lead to scale and fouling so water must be drained off and replaced with *make up water*. The amount of bleed off and make up water is expressed as a cycle of concentration.

• Solution? Install a conductivity controller unit to reduce the flow of make up water and increase the concentration ratio.

• Install blowdown meter so you are paying only for the water discharged and not for the water evaporated.
Pools and Spas
Golf Course Management and Landscaping
Landscaping
Golf Courses
Watergy 3 Calculator from FEMP
Tools for Evaluation and Benchmarking

• Strategic Plan & Water Audits

• Facility Performance Evaluation

• Metering

• Use of online tools: Energy Star portfolio manager and FEMP tools
Portfolio Manager

Rate Your Energy Performance

Portfolio Manager is an online, interactive energy management tool that allows you to measure and track your building’s energy and water consumption, rate the energy performance of your property on a scale of 1 to 100, quantify carbon and other greenhouse gas emissions, identify investment priorities, and verify improvements over time. Benchmark all of your facilities using Portfolio Manager and update your data regularly to better manage your energy consumption.

USE PORTFOLIO MANAGER STEP-BY-STEP

<table>
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<tr>
<th>STEP</th>
<th>ACTIVITY</th>
<th>ACTION</th>
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<td><a href="http://www.energystar.gov/benchmark">www.energystar.gov/benchmark</a></td>
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</tbody>
</table>
The Guest One Never Thinks About...
Our warmest thanks for having us today
Please Contact Us for Collaboration

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